CALIFORNIA FOREST LEGACY PROGRAM
ASSESSMENT OF NEED

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CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
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INTRODUCTION

As one of the nation's largest forested states, California encompasses a rich diversity of forest types and forest resources, and is the third largest producer of lumber products in the U.S. (WWPA, 1994) Privately owned forestlands comprise nearly half of California's 32.6 million acres of forestland, and include some of the state's most important and productive forest resources, including timber, fish and wildlife habitat, and watersheds. As in the past, the pressures of population growth, development patterns, and other factors will continue to threaten these lands, their environmental values, traditional forest uses, and resource management-based economies by converting forests to non-forest uses and conditions.

The State of California's Forest Legacy Program (the "Program") will establish a cooperative effort among private, State, Federal, and local partners to provide private forestland owners with new incentives to voluntarily protect their forestland and its important environmental, economic, and social values from conversions and related threats. Landowners who participate in the program may either donate conservation easements to the Program or have conservation easements purchased at fair market value by the USDA Forest Service's national Forest Legacy program. These conservation easements will protect the forest landbase and specific forest values identified by each landowner. Landowners who donate easements to the Program are likely to be eligible for income and estate tax benefits in proportion to the value of their easements. Participating nonindustrial landowners will also be eligible for technical and financial support from the State's Forest Stewardship Programs. Easement donations are further encouraged by Forest Service provisions allowing some of the Federal cost share monies to be used to compensate land trusts for direct project expenses incurred in accepting donated easements.

As described in this Assessment of Need (AON), the Program can help implement ecosystem management and biodiversity conservation across California's diverse landscapes, while helping participating private forestland owners meet their management goals. The AON also provides an overview of the state's forest resources, documents known and likely threats to private forests in California, and describes the need for California's Program and how it will operate. In addition, the AON serves as California's application to the national Forest Legacy program. Previous drafts of the AON, and their associated public participation processes, have provided opportunities for the public to learn about and comment on the Program, including the proposed Forest Legacy Areas, Program operation, and eligibility criteria for parcels to be accepted into the Program. The AON discusses how this public input was used to help shape the Program; responses to key comments are also provided.

ACRONYMS USED IN THE AON

AON	Assessment of Need
BF	Board Feet
BLM	Bureau of Land Management
CC	Certificate of Compliance
CDF	California Department of Forestry & Fire Protection
CFAA	Cooperative Forestry Assistance Act
DFG	California Department of Fish & Game
FLA	Forest Legacy Area
FPA	Forest Practices Act
IPF	Industrial Private Forestland Owner
MOU	Memorandum of Understanding
NIPF	Non-Industrial Private Forestland Owner
SFSCC	State Forest Stewardship Coordinating Committee
State	State of California
Task Force	The Forest Legacy Task Force of the SFSCC
TCP	Timberland Conversion Permit
TPA	Timberland Productivity Act of 1982
TPZ	Timberland Production Zone
USDA	United States Department of Agriculture

I. CALIFORNIA'S FOREST LEGACY PROGRAM -- AN OVERVIEW

Background -- The Federal Program

The *Cooperative Forestry Assistance Act of 1990* created the national Forest Legacy program "to assure that both the traditional uses of private lands and public values of America's forest resources are protected for future generations."[i] In establishing the national program, the U.S. Congress recognized the pressing need to identify and protect environmentally important private forestlands threatened by parcel divisions and present or future conversion to nonforest uses such as housing or commercial development. Privately-owned forestlands comprise a substantial proportion of the forest resource base in many states.

The national program enables the USDA Forest Service to work with the states and private forestland owners who wish to voluntarily protect their forest resources through the establishment of conservation easements.[ii] By using conservation easements, the Forest Service can work with landowners to conserve key resources without a change in ownership. Participating states are responsible for developing state Forest Legacy programs, for identifying forestlands which merit inclusion in their programs, and for prioritizing forestland parcels on which the Forest Service will purchase easements or help cover the costs of the easement donations. Depending on the availability of funds, the Forest Service will contribute up to 75% of the State Program's costs.

Governor Pete Wilson designated the California Department of Forestry and Fire Protection (CDF) as the lead agency for California's Forest Legacy Program after an initial statewide public sensing found significant support for creating a Forest Legacy Program in California. Development of the Program and this Assessment of Need (AON) was directed by CDF, the State Forest Stewardship Coordinating Committee (SFSCC), and the SFSCC's Task Force for Forest Legacy (Task Force). The SFSCC represents a broad range of expertise and interests from across the state, including forest landowners, conservation groups, Indian associations, local governments, and resource agencies. Appendix A lists the organizations represented on the SFSCC.

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i See the *Cooperative Forestry Assistance Act of 1990* (PL 101-624, Title XII, State & Private Forestry, s. 1217 *et seq.*,).

ii While the legislation creating the national program allows participating landowners to use a variety of conservation tools, including reserved interest deeds or fee title transfers, both the USDA Forest Service and the State of California intend conservation easements to be the Program's chief conservation tool. See the *USDA Forest Service Guidelines for the Forest Legacy Program* .

Threats to California's Forestlands

Of California's 32.6 million acres of forestland, 44% are in private ownership, including many of the most economically and ecologically significant lands. This includes 33% of all conifer forests and 71% of all hardwood forests. (FRRAP, 1988) The importance of private forestlands to California's economy and environment have been recognized for over two decades by the State's Forest Practices Act and other statutes and policies.[iii]

California's private forestlands are threatened by continued population increases and changes in land use patterns, including parcel size reductions, residential and commercial development, and by changes in forest cover. One of the principal causes of these land use changes, population growth, is projected to continue to be significant for the foreseeable future, with the statewide population increasing by 30% from 1990 to 2005. (Finance, 1990) These pressures have been reducing forested areas in southern California for many decades, and conversion of the forests of the Sierra Nevada and the north coast has also been increasing. In some cases, past management practices -- such as poorly placed or maintained roads, or a lack of reforestation -- inadequately protected forest resources, leading to additional changes in forest composition and structure, increased fire risk, and persistent water quality impacts. These trends and other factors affecting California's forest resources are discussed in more detail in Section III of the AON.

California's Forest Legacy Program -- Approaches and Objectives

California's Forest Legacy Program provides interested landowners, the state, and the USDA Forest Service with a new means of working cooperatively to help maintain the state's forest landbase, as well as to implement regional and local ecosystem management and biodiversity conservation efforts. The Program is intended to provide private forestland owners with new incentives to help voluntarily protect California's forest landbase, traditional forest uses, and environmentally important forest resources. The AON sets the stage for the Program by identifying and prioritizing environmentally important private forestlands for voluntary protection, especially those which are threatened by present or future conversion to non-forest uses and conditions, and by delineating conservation goals and objectives for the Program.

As required by the *Cooperative Forestry Assistance Act of 1990* and the USDA Forest Service's *Guidelines for the Forest Legacy Program*, the Program is purely voluntary, and

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[iii] See the *Z'Berg-Nejedly Forest Practices Act of 1973* (Pub. Res. Code, div. 4, ch. 8, s. 4511 *et seq.*), the *California Timberland Productivity Act of 1982* (Gov't Codes s. 51100 *et seq.*), and the *California Environmental Quality Act* (Pub. Res. Code s. 21000 *et seq.*).

may only work with willing landowners. The *Cooperative Forestry Assistance Act,* Forest Service *Guidelines,* and California Forest Legacy Program establish no new regulatory processes or authorities. Rather, the Program facilitates greater use of existing tax incentives and technical assistance programs by utilizing limited Forest Service funding to encourage landowner participation.

Landowners who wish to participate in the Program will be able to continue traditional forest uses which are compatible with the forest resources they are protecting. The SFSCC's Task Force for the Program has defined "traditional forest uses" as multiple use activities which provide various public benefits including forest products, forage, clean water, fish and wildlife habitat, rare and native plants, public recreation access, cultural resources, and / or scenic enjoyment.

The Task Force has given certain forest resources (or "environmental values") highest priority for protection through the Program: watershed values, fish and wildlife habitat, habitat connectivity, and biodiversity. These resources were targeted because of public concerns, as well as the State's objectives for ecosystem management, biodiversity, watersheds, and water quality. Public comments have consistently included repeated concerns that the Program address all forest types threatened by conversions, including oak and riparian woodlands, as well as habitat connectivity and areas contiguous with public lands, biodiversity, and key fish and wildlife habitats.[iv] These priority resources are particularly vulnerable to population growth, non-forest development and land use conversions, and other threats, in part because of the cumulative effect of past conversions and historical management practices. Protection of these resources will also serve to maintain the forest landbase and therefore long-term opportunities for other traditional forest uses, such as compatible types of commodities production.

The Task Force then established six conservation goals to focus the Program on protecting these priority resources:

- Prevent future conversions of forestland and forest resources
- Protect wildlife habitat, rare plants, and biodiversity
- Maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions
- Protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity
- Protect water quality, fisheries, and water supplies

[iv] See for example the *Summary of Initial Public Involvement for the State of California* (CDF, 1993) and the *Analysis of Public Comments Received on the 1st Draft AON for the California Forest Legacy Program* (PFT, 1995). These documents are available for public review from CDF.

- Maintain and restore natural ecosystem functions

These goals, and more specific conservation objectives which will be used to help implement them, are discussed in further detail in Section V.

The Program will be implemented in cooperation with ongoing State, local, and private resource planning and management efforts. Some landowners, for example, are already managing for environmental values and forest productivity at standards above and beyond those required of them by law; others would do so if additional information and assistance were provided. In such cases, the Program provides an opportunity for the landowner to help protect their investment in their forestland's multiple resources for present and future generations.

The Program will complement CDF's Fire Safe Program by helping to curb urban sprawl and development in the urban / wildlands interface, where there is a need to reduce severe fire risks. The Program will also enhance ecosystem management efforts by utilizing and encouraging cooperative public-private networks to protect environmental values on private lands. The State has been promoting the use of ecosystem management to more effectively protect and manage resources across multiple ownerships since 1991 through its Bioregional Councils and other means. Several counties are developing regional habitat conservation plans and other programs which can provide an important context for the implementation of the Program. Voluntary participation in the Program also provides interested landowners with opportunities to engage in private or cooperative management activities designed to protect fisheries and other forest-related resources which continue to be threatened by the results of past management practices, such as the erosion of poorly placed or maintained roads.

Along with "traditional forest uses," which are defined above, the Task Force has defined several other key terms for the purposes of the Program:

"Forestlands" are defined as lands that can support 10% native tree cover under natural conditions, and that allow for management of one or more forest resources including timber, fish and wildlife, biodiversity, water quality, recreation, aesthetics, and other public benefits.

"Environmentally important forest areas" are defined as forestland parcels on which one or more public values are threatened. These public values are defined as: riparian areas, watershed values, fish and wildlife, threatened and endangered species, other ecological values (including biodiversity and habitat connectivity), cultural resources, scenic resources, and public recreation.

"Threats" are defined as impending danger or harm to forestlands and their

resources from population and development pressure, and past management practices that inadequately protected the forest resources.

"Development pressure" has been defined as the condition where lands are in proximity to areas undergoing subdivision, parcelization, and road and utilities construction, or the lands have the necessary permits to begin parcelization, subdivision, or construction in the near future.

Definitions for additional terms are provided in Appendix B.

Selection of Forest Legacy Areas

CDF and the Task Force have selected sixteen Forest Legacy Areas (FLAs) in six counties for initial inclusion in the Program. Only owners of private forestland parcels located within these FLAs will be eligible to participate in the Program. As discussed in Section V, the Program's FLAs were first identified by CDF and the Task Force through a statewide analysis of conversion threats, catastrophic fire threats, and environmental and forest resource values. Of the resulting project areas, thirty-three were initially proposed for inclusion in the Program. These areas are shown in Appendix C, Figures XI and XII. These thirty-three project areas were then refined through the second and third drafts of the AON, resulting in the sixteen FLAs which are proposed for inclusion in the State's Program. Sections VII through XI describe each of the Program's FLAs, their forest resources, and FLA-specific conservation objectives in more detail.

The scope of the sixteen FLAs balances the need to help protect a diversity of forest resources across the state with the need to keep the Program especially efficient and manageable during its initial implementation. In addition to comments which suggested that the Program should operate statewide, a number of public comments on the first and second draft proposed additional areas throughout the state which are likely to merit protection through the Program. These areas are listed in Appendix D**.** As discussed in Section VI, the USDA Forest Service *Guidelines for Forest Legacy* enable the state to request that the AON be amended to incorporate additional FLAs if this becomes desirable at some future date.

Landowner Participation

Forestland owners who are interested in participating in the Program may do so by either donating conservation easements to the Program, in which case they may receive significant income and estate tax benefits, or by applying to have conservation easements on their property purchased by the Program. Section V discusses the

application process for landowners who are interested in protecting their forestland and its associated resource values through the Program. Limited funds for easement purchases will be provided by the Forest Service, subject to the national Program's cost share requirements, which are discussed in Section V. Forest Service funds may also be used to cover project expenses for easements which are donated to land trusts, the Forest Service, or other easement holders. These expenses may include activities such as inventories, mapping, other baseline resource descriptions, title research, initial appraisal work, and drafting / discussion of easement terms.

As discussed in Section V, CDF will review landowner applications periodically, and will choose properties for participation based on the Program's conservation goals and objectives, as well as FLA-specific conservation objectives. Other selection criteria help ensure that the Program will be used in situations where conservation easements are an effective and efficient tool for protecting the forest resources, where the landowner's desired management practices will help protect and / or maintain the resources protected by the easements, and where local agencies or organizations are interested in the easements. In addition to being located within one of the FLAs, applicant landowners must continue to manage their property for one or more traditional forest uses of their choice.

Conservation Easements and Resource Management

California's Program provides new incentives for landowners to voluntarily establish conservation easements on their properties to address specific forest management and conservation goals, including protection of the forest landbase over the long-term. Conservation easements have been widely used around the United States to achieve voluntary protection of open space, historical sites and natural resources. A conservation easement is a restricted interest in real property that a landowner places on the property's deed, permanently binding all future owners to its terms. The conservation easement is granted to an easement holder, usually a non-profit land trust or a suitable government agency, while the title to the property and all other unrestricted property rights remain with the landowner. The grant of a conservation easement by a landowner does not confer any rights to the easement holder to develop the land uses which are restricted by the easement; rather, the easement holder is obligated to ensure that the terms of the easement are upheld over time.

Conservation easements enable landowners to receive financial benefits for voluntarily restricting specific development rights and land uses in order to preserve their forest resources. These benefits can be realized either through sale or donation of the easement to a program like Forest Legacy. The value derived from the sale or donation of the easement is directly proportional to the degree to which the property's development and uses are restricted. By law, the value of these restrictions will be

assessed at their fair market value. Significant income tax benefits are available for the charitable donation of conservation easements to qualified land trusts or government agencies. Conservation easements can also help ensure that forestland is valued in one's estate for its forest uses, instead of its non-forest development or liquidation value, thereby providing an opportunity to keep the family's forest assets intact for the next generation.

Each easement will be drafted individually and tailored to fit the natural characteristics of the land, the personal vision of the landowner, and the Program conservation goals. The terms of each conservation easement will be developed by the landowner and the easement holder to protect the specific environmental resources by defining and directing the type of development that may occur in different areas. Desired residential, commercial, and forest resource uses will be identified, while uses which are unwanted or incompatible with the protected resources will be restricted. The land owner and easement holder will also work together to define forest resource management goals and restrictions which reflect the owner's desired uses and resource protections. While the easement may define certain management restrictions, all management responsibilities are retained by the landowner.[v] The landowner is free to proceed as usual with any productive uses and development which are compatible with the resource protection goals of the easement, and which are not specifically restricted.

The landowner and easement holder also work together to develop easement monitoring terms and schedules. While easement monitoring methods can vary with each easement, the easement holder is always obligated to conduct periodic monitoring to ensure that the easement's terms are honored. Easement monitoring is discussed further in Section V.

Finally, landowners who establish easements through the Program must also develop a multi-resource management plan that is consistent with the terms of the conservation easement. Non-industrial private forestland owners (NIPFs) may develop their plans through CDF's Forest Stewardship Program, and may also be eligible for technical and financial assistance.

The Assessment of Need Process

[v] While it is the State's intent to utilize conservation easements as the Program's primary conservation tool, those landowners who wish to do so may transfer a reserved interest deed or fee title to the Forest Service or other qualified program partners. The sale or donation of fee title or a reserved interest deed can provide landowners with the opportunity to transfer resource management authority to the Forest Service or other program partner.

States that wish to be included in the national Forest Legacy program must demonstrate that they need the national program's resources to help protect their private forestlands, and that they have developed a state Forest Legacy program. This Assessment of Need (AON) is intended to fulfill these requirements, and has provided the public with the opportunity to comment on California's Program, FLAs, and parcel eligibility criteria.

The AON describes California's forest resources, documents historic and potential threats to those resources, documents forty-four project areas and other areas identified by the public as having environmentally important forest resources which are highly threatened, and proposes sixteen FLAs for initial inclusion in the Program. As per the Forest Service's *Guidelines for Forest Legacy*, the forest resources considered here include forest products opportunities, soil productivity, fish and wildlife habitat, minerals and geological resources, watershed values, aesthetic values, recreation, cultural and historical values, and other ecological values. The assessment of conversion threats considers ownership patterns, projected forest use patterns, and other demographic trends.

As with initial public input on the Program, the majority of public comments received on the first, second, and third drafts of the AON supported the Program, its goals, conservation objectives, and FLAs. A number of the supporting comments also proposed additional areas for inclusion in the Program's FLAs, while others provided suggestions for improving the AON and the Program's institutional design and operation. These additional areas are listed in Appendix D. Most of the opposing comments objected to the Program's goals and conservation objectives, while some also suggested that the Program may have negative impacts on different economic sectors. A few opposing comments proposed alternatives to the Program which they felt would be more effective at preventing forestland conversions, such as stricter land use laws. As discussed in Appendix G, support for the Program tended to be more heavily focused in the north and central coastal regions, the southwestern region, and among statewide organizations. Opposition to the Program was most heavily focused in the Sierra Nevada and Klamath-Cascades regions.

Section VI discusses how CDF staff and members of the SFSCC's Forest Legacy Task Force used this feedback in refining the Program's FLAs. Sections V and VI also clarify how the Program will operate and thus how it is likely to affect different groups in California. Appendix G also provides responses to key public comments.
While it is not within the scope of the AON to assess alternatives to the Program, implementation of the Program in California will neither preclude nor promote alternatives which could be implemented at the State or local level.

II. CALIFORNIA'S FOREST RESOURCES

Forest Types

Of California's 99.8 million acres, roughly 32.6 million acres are covered by conifer and hardwood forests. (FRRAP, 1988) These conifer and hardwood forests are depicted in Appendix C, Figures I and II. Because of the state's large size and diverse landscapes, soils, hydrology, and microclimates, the forests of California are themselves highly diverse. CDF identifies twelve types of conifer forests, based upon the dominant tree species in areas where tree coverage is currently at least ten percent of the landscape. (FRRAP, 1988) These are mixed conifer, ponderosa pine, Douglas fir, Jeffrey pine, red fir, lodgepole pine, subalpine conifer, coastal redwood, closed-cone pine cypress, pinyon-juniper, juniper, and montane hardwood conifer. Four hardwood forest types are also identified: valley foothill hardwood, montane hardwood, valley riparian, and montane riparian. Appendix C, Table I, describes these forest types in more detail.

Today, Douglas fir and valley-foothill hardwood are by far the most prevalent forest types on private lands, comprising 63% of privately owned forests, by acreage. (FRRAP, 1988) However, less prevalent forest types and species also fulfill important ecological and economic roles. Port Orford cedar, for example, is more water tolerant than most other conifer species, and helps stabilize stream banks in parts of the north coast region. California's diversity of forest types and environmental conditions also contributes to the state's high levels of biodiversity more generally.

Soil Productivity

California's diverse geology and climate produced over 3,000 soil types across the state. (Whiting, 1994) Generally, the state's forest species are supported by deeper loam soils, such as those derived from granitic and igneous rock, and alluvial soils deposited by rivers. (Storie, 1953) Serpentine, limestone, and highly acidic soils which support specialized natural biological communities are also found scattered throughout the state. (Jones & Stokes, 1992)

One of the more common measures of forest soil productivity is the site indices for commercially-valuable conifer species. These indices are used to project tree growth under different site conditions, including soil types and rainfall. While the full range of site classes can usually be found throughout each species' range across the state, high productivity areas for conifers are generally found in areas with greater rainfall, particularly the coast redwood zone and, to a lesser extent, the Siskiyou-Trinity area and the Sierra Nevada. (Munn, 1994; Reioux, 1994) Humboldt County, for example,

encompasses 10,000 acres of Site Class I lands, 413,000 acres Site Class II, 477,000 acres Site Class III, 90,000 acres Site Class IV, and 2,000 acres of Site Class V.[vi] (PFT, 1994a)

Although they are not widely utilized, site indices also exist for pinyon, juniper, black oak, eucalyptus, and Oregon white oak. For other species, studies may be available which relate stand variables including volume, green weight, stem surface area, basal area, and the number of trees per acre. (Reioux, 1994) The central coast and the southwestern mountains of southern California, such as the San Gabriel Mountains, also receive appreciable amounts of rainfall.

Timber and Wood Products Opportunities

In addition to being the third largest producer of lumber products in the nation, California produces nearly all the nation's redwood products, as well as most of its incense cedar and sugar pine products. (WWPA, 1994) Privately owned forestlands have been a key source of wood products historically, and their importance is likely to increase as publicly-owned lands are returned to less intensive management for timber outputs. Of California's 32.6 million acres of conifer and hardwood forests, 14.2 million acres are privately owned, including 7.1 million acres which are considered to be highly productive for the purpose of commercial timber management. (FRRAP, 1988)

In terms of stumpage prices, the value of California's timber harvest to the state's economy has continued to increase in recent years. The overall stumpage value of softwood timber harvested increased from $680 million in 1988 to $1,272 million in 1993.[vii] (TTD, 1994a) (Christmas trees, pulp chips, and hardwood logs were the next most valuable products harvested statewide in 1993 after softwood sawlogs. (TTD, 1994a)) In conjunction with the scaling-back of public lands harvests, the relative contribution of private lands to the state's timber production has increased from 57% in 1988 to 79% in 1993.[i] (TTD, 1994a) The recent increases in income from timber harvested reflect an even more substantial rise in stumpage prices, for the volume of softwood sawtimber harvested across the state on both public and private lands has declined from 4.7 billion board feet (BF) in 1988 to 2.8 billion BF in 1993, a level which is more consistent with harvests in the early 1980's.[viii] (TTD, 1994a; Warren, 1994) As a result of these trends, the yield tax receipts which counties receive from local timber

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vi Site Class I lands are the most productive in terms of tree growth; Site Class V lands, the least productive. Acreages are for land zoned for Timberland Production (TPZ) only.

vii Harvest volumes tracked by the State Board of Equalization are for softwood sawlogs only. Harvest values include some prices reported to the Board for chips, hardwood firewood, and other miscellaneous products.

viii Harvest levels in 1982 were 2.5 billion BF. (Warren, 1993)

harvests to help fund infrastructures and services have also been increasing at the statewide level.[ix]

Historically, lumber has been the state's primary softwood product. Statewide, production increased from 3.0 billion BF in 1982 to 4.0 billion BF in 1992.[x] (Warren, 1994) While statewide production of softwood structural boards has declined from 260 million square feet in 1983 to 59 million in 1992, production may pick up with the construction of new plants utilizing chips and other fiber sources. (Warren, 1994) California also produces significant amounts of pulp and paper products from 618 pulp, paper, paperboard, and miscellaneous paper products mills. (Census, 1990) In addition to hardwoods harvested for chips and pulp, the state's hardwood and mixed conifer-hardwood forests are also responsible for producing significant amounts of firewood, hardwood lumber, and value-added products. As of the late 1980s, over 885,000 cords of fuelwood were harvested per year, including 160,000 cords of hardwoods. (FRRAP, 1988) Exports of unfinished wood products are also significant. In 1993, they included 30.5 million BF of softwood logs, 10.0 million BF of hardwood logs, 135,000 short tons of pulp, and 330,890 short tons of chips. (Warren, 1994)

Employment in the forest products industry is more evenly distributed between lumber and paper products, with lumber products employing 45,000 persons in 1993, and paper and allied products employing 40,000. Total employment in 1982 was also in the range of 84,000 persons. (Warren, 1994)

Non-Timber Commodities

Both the demand for, and knowledge about, non-timber forest products like decorative greens, florals, mushrooms, and other specialty items has been increasing rapidly over the last decade. California's diverse forest ecosystems have the potential to produce a wide array of specialty products, only some of which are now utilized commercially. The Bureau of Land Management, for example, expects to sell a variety of floral greenery and other items, including ferns, mosses, tree boughs, and pine nuts. Other potential products include decorative cones, madrone and tanoak smokewood, weaving materials, and fabric dyes. Plants with food or pharmaceutical potential include black walnuts, bay, tansy, nettle, Oregon grape, and various berries, mushrooms, and acorns. (Thomas, 1993) The availability of these products depends not only upon the region and forest type, but also upon the condition of the forest itself.

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ix *California Timber Yield Tax Law*, Revenue & Taxation Code, Part 18.5, Division 2. Statewide, Yield Tax receipts have increased from an average of $10.9 m. between 1977-83 to $31.8 m. in 1993 (values are not in constant dollars). (FRRAP, 1988; TTD, 1994b)

x These figures include one mill in Nevada.

Fish and Wildlife Habitat

California's forests provide habitat for a wide array of wildlife and aquatic species. According to the Wildlife Habitat Relationships database maintained by the California Department of Fish & Game (DFG), the state's conifer forestlands provide optimal or suitable breeding habitat for approximately 316 wildlife species, including 108 mammals, 152 birds, and 56 reptiles and amphibians. A number of species, such as fisher, marten, wolverine, and many squirrels, voles, bats, and owls are highly dependent upon specific conifer species or seral stages, while others use conifer forests only for foraging or cover. Hardwood forests, which include some riparian ecosystems, also provide breeding habitat for 327 vertebrates, including 110 bird species. The production of acorns in oak woodlands alone provides a key food source to over 96 wildlife species, including deer, black bear, wild turkey, and valley quail. (FRRAP, 1988)

California's public and private forestlands also provide essential migratory habitats for many wildlife species. While Federal lands could be managed to provide "core" habitats for many species which require larger land areas, or older forest seral stages, many of these lands are not well connected to each other. (FRRAP, 1988) Consequently, private forestlands often provide the only opportunity for these species to migrate to other population centers, thereby maintaining the genetic diversity of those populations. This is particularly true for species which live at lower elevations, where private lands cover a large proportion of the landscape and available habitats.

Forests also comprise key parts of many fish habitats, as discussed below. Today both native and non-native fish populate California's streams, rivers, and lakes. Coldwater fish particularly associated with conifer forestlands include eastern brook trout, brown trout, rainbow trout, cutthroat trout, and golden trout, as well as steelhead, anadromous cutthroat trout, coho, and chinook salmon. (FRRAP, 1988)

California's forestlands, both public and private, provide habitat for a variety of species listed as threatened or endangered, or which are candidates for listing under the Federal and State Endangered Species Acts. California has one of the highest rates of species endangerment per county in the nation, and more candidate species than any other state. (USDA, 1994a) Statewide, 138 animals, including fishes, are listed under these Acts. (DFG, 1994) The State Resources Agency also manages a number of special concern or special status species which may not be listed under the Acts. Thirty-one species on the 1993 USDA Forest Service Scientific Analysis Team's list of vertebrates closely associated with old growth forests are listed in at least one of these Federal or State programs. They include several salamanders, tailed frog, northern goshawk, marbled murrelet, spotted owl, and several woodpeckers and songbirds. (Garrison, 1994) One hundred forty-three riparian plant, animal, and fish species from across the state are similarly listed, including 75 salmon runs considered to be at risk. (SLC, 1993)

In addition to their intrinsic worth and roles in maintaining the health of forest ecosystems, California's fish and wildlife populations contribute to the state's economy by supporting fishing and hunting for both commercial and sport industries, and by providing amenity values for landowners and recreationists. One survey found that 66.5% of California's population spends some or most of their leisure time outdoors and participates in either consumptive or nonconsumptive wildlife activities. (FRRAP, 1988) State revenues from fishing and hunting licenses totaled $56.3 million in 1993. (Raglen, 1994) Romm *et al* (1983) also found that forestlands in the north coast region were also used for subsistence in a number of cases.

Anadromous fish also supported extensive Indian communities prior to the late 1800's, and they remain an important economic and cultural resource to several Indian groups on the north coast despite recent fisheries declines. As with other states on the Pacific coast, the recent collapse of California's anadromous fisheries has been dramatic, and reflects the cumulative effect of steadily growing watershed impacts on spawning and rearing habitat, overfishing, and variations in ocean currents and nutrient upwelling. While the combined value of the offshore commercial chinook and coho salmon troll fishery catch was $11.5 million in 1985 (in 1993 dollars), it declined to $4.5 million in 1992. (PFMC, 1994) Figures for the entire offshore fishery show the same pattern, declining from a $67 million / year average from 1971 to the early 1980's, to $34 million in 1991. (SLC, 1993)

Watershed Values

As a state whose large population is heavily focused in arid regions, such as southern California, or adjacent to saline ocean waters, California uses its forested watersheds for a large proportion of its in-state water supply. Roughly 85% of the state's runoff from precipitation comes from conifer dominated or alpine watersheds, particularly those in the Klamath Mountains, south Cascade, and Sierra Nevada, in northern and central California. Some of this runoff is channeled through an extensive system of reservoirs and canals from the Sierra Nevada and the Sacramento River to agrarian and urban users in the Central Valley, the San Francisco Bay Area, and southern parts of the state. The remainder is left to maintain river flows which support riparian habitats, fisheries, estuaries, and clean water supplies for municipalities, irrigators, wildlife, and other downstream users. Appendix C, Figure III, shows California's major rivers and canals.

Forests play a key role in maintaining water quality and supply. The root structures of trees and other vegetation help bind the soil together and, along with leaves and other surface debris, helps prevent erosion. These structures also enhance soil water retention, helping to ensure that streamflows will be more stable throughout the seasons. This is particularly important in California, where summers are long and dry.

In addition to protecting riverbanks from erosion, riparian zone trees provide shade which moderates summer water temperatures for fish, other aquatic life, and recreationists. Large debris from these trees also helps maintain stream habitat structures, while small debris provides a source of food for some aquatic animals. While the uplands of many California watersheds are managed by the Forest Service and other Federal agencies, those on the north coast are largely privately owned, as are the lower elevation forests across most of the state. (FRRAP, 1988)

Aesthetic and Scenic Values

The splendor of California's rich and diverse environment attracts visitors from around the globe, contributing to a strong recreation and tourism industry. Employment in wholesale and retail sporting goods, and in hotels and recreational camps was 208,000 in 1990, and accounted for $2.8 billion in payroll.[xi] (Census, 1990) Visits to national forests, and state and national parks, have exceeded those in all other states, and are projected to increase. (FRRAP, 1988) The attractiveness of such destinations depends partly upon the scenic quality of lands surrounding them.

Public and private forestlands also play a key role in maintaining the aesthetic quality and livability of areas where people work and reside. Planners and development experts across the west now recognize that providing such amenity values is essential to maintaining and attracting new businesses and skilled work forces. Many people also associate healthy forests with a healthy environment, contributing further to their quality of life.

Public Recreation

California's coastal, foothill, and alpine forests are used for a wide range of recreational activities, including hiking, backpacking, fishing, hunting, wildlife viewing, developed-site camping, skiing, and off-road vehicle use. Recreation in and around California's forests accounts for a large percentage of its recreation and tourism industry. (FRRAP, 1988) As of 1988, seven counties had a moderate to high level of recreation dependence due to their location near popular areas in the Sierra Nevada. Hotels, restaurants, guide services, outdoor equipment manufacturers and dealers, and other businesses also benefit directly from recreational activities statewide. (FRRAP, 1988)

Private forestlands comprise a valuable recreation resource, including for fee or membership-based hunting and fishing access, off-road vehicle use, and camping. Of

[xi] This includes hotels located in urban areas.

California's 1,400 campgrounds, 358 are privately owned. (Loomis *et al*, 1990) As in the case of aesthetic and scenic resources, private forestlands can also enhance California's recreational resources when they lie adjacent to public lands. Agreements with private landowners have facilitated the development of public access trails in a number of river corridors and other areas. The demand for private lands recreation is expected to continue increasing as growth in the popularity of outdoor recreation, California's population, and the tourism industry outstrips public resource capacities. Use of the national forests alone is projected to reach 102 million recreation-visitor-days by the year 2028.[xii] (FRRAP, 1988)

Cultural and Historical Resources

A diversity of Indian cultural resources exist on public and private lands across the state. While some of these resources are referred to as archeological resources, they hold cultural significance to many Indians today. Ancient Indian rock art, for example, is known to exist in at least 1,000 sites in 39 counties. Petroglyphs (rock etchings) and pictographs (rock paintings) have been found throughout much of the north coast; northern, central, and southern Sierra Nevada; and the south coast. (Clewlow, 1978) Other site types which are likely to be found in forested areas include villages, burial sites, food processing centers, and other locations with historical or religious significance. (Foster, 1994; Jablonowski, 1994)

Historical artifacts from the gold rush and the logging booms of the mid 1800's are also likely to be found on public and private forestlands, particularly in the Sierra Nevada and the north coast. Abandoned mines, railways, and equipment are likely to be found; old homesteads and community buildings may also be located on private lands.

Mineral Resources and Outstanding Geological Features

California encompasses a wide diversity of geological types and mineral resources, many examples of which are found on its forestlands. The Sierra Nevada range is noted for its alpine forests and glacier sculpted granitic upthrusts. (Norris *et al*, 1990) The glaciers left behind numerous natural lakes and basins. The western Sierra Nevadas were the focal point of the gold rushes which shaped California's early modern history. Today, the Sierra Nevada are mined for gold, silver, molybdenum, and copper; as well as sand, gravel, dimension stone, and ceramic clays. (CMG, 1966; Norris *et al*, 1990)

The Klamath and southern Cascade Mountains dominate much of northern California. The Cascades are volcanic in origin, the Klamath Mountains are composed of

[xii] A recreation visitor day is defined as twelve hours of use by one person.

metamorphic rock which has broken through newer sedimentary deposits, and their serpentine soils support many endemic plant communities. The Klamath region mountains and river bottoms were also mined heavily for gold. Other minerals found there include chromium, copper, mercury, and limestone. (Norris *et al*, 1990)

The Coast Ranges have been shaped by folding and faulting of sedimentary rock, and the upwelling of the underlying tectonic plate. (Norris *et al*, 1990) Much of the nation's mercury was once mined here. Today, rock quarries and gas wells exist on private forestlands on the north coast, while areas further south are being used for geothermal energy production. (Norris *et al*, 1990; Spittler *et al*. 1994.)

Most of the remaining forests of southwestern California are found along mountain ranges, including the Peninsular and Transverse Ranges. The Transverse Ranges are generally granitic, and have been affected by faulting. The Peninsular Ranges are also faulted, but were formed primarily by volcanic and sedimentary processes. In addition to oil, gas, and geothermal fields, gold, nickel, and gemstones have been mined in these areas. (Norris *et al*, 1990; CMG, 1966)

Other Ecological Values

Biodiversity

California looks to biologically diverse forests for a number of commodity and non-commodity values. In many cases, the availability of resources used by local and regional economies depends directly upon the health of the ecosystems from which they are extracted or in which they are experienced. Just as the site productivity of forestlands depends upon the health of microorganisms living in soils, the health of California's forests, rivers, wildlife, plant communities, and other forest resources generally reflect, and depend upon, a diverse range of plant and animal life.

Biological diversity (biodiversity) is a particularly important component and measure of ecosystem health and function. Biodiversity can be defined most simply as the number and genetic richness of: a) different individuals found within a population of a given species, b) of populations found within the species' range, c) different species found within a natural community or ecosystem, and, d) of different communities and ecosystems found within a region. Generally, as the biodiversity of an ecosystem increases, it becomes more capable of adapting to changing conditions, such as the regional effects of global climate changes.

California's environment supports a particularly diverse range of forest species, communities, and ecosystems. The State's primary means for tracking biodiversity, the Natural Diversity Data Base maintained by DFG, defines 32 types of woodland

communities, including 18 types of oak, walnut, grey pine, and cismontane woodlands. The Natural Diversity Data Base also identifies 63 types of forest communities found among broadleaf upland, north coast coniferous, closed-cone coniferous, lower montane coniferous, upper montane coniferous, and subalpine coniferous forests. (DFG, 1992) Along with California's diverse landscapes, soils, hydrology, and microclimates, this diversity of forest types supports much of the state's 750 vertebrates, 6,800 plants, 25,000 insect species, and 380 natural biological communities. (Jones & Stokes, 1992) A large number of these species, including Monterey pine, giant sequoia, blue oak, and gray pine, are endemic to California alone. (FRRAP, 1988)

Sheer numbers do not tell the whole story when assessing biodiversity. The range of genetic variation among a species' population may also contribute to that species' adaptability and survival as much or more than the number of individuals found. Local conditions, such as climate or rainfall, may result in relatively few species living in a given area; however, those species that do live there may play a particularly significant role in local and regional ecosystems. In general, "keystone species" play more important roles in their communities and ecosystems than do others, such as when they provide a key link in the food chain for a large number of other species. The term "indicator species" has also been used to refer to species whose presence indicates the health of an entire system. Managing habitat for the needs of "umbrella species" which are ecologically important and which require larger territories, such as larger carnivores, can also help provide for the needs of many other species which utilize the same habitats.

As with wildlife populations, not all of California's natural communities are well represented today. Forty-eight percent of California's natural communities are considered rare or threatened within the state. Some of these communities are naturally rare; however, most have been reduced by development and other sources of habitat conversion. (Jones & Stokes, 1992) In forestlands, older seral stages, including those which function ecologically as "old growth," are particularly lacking for most forest types. Later seral stage forests may be considered "ecological old growth" when they provide habitat for species associated with old growth forests, and when other criteria for ecosystem productivity, and nutrient and water cycling are met. (Spies *et al*, 1988) A number of studies have identified minimum defining characteristics for old growth. Spies *et al* (1988), for example, provides minimum characteristics for Douglas fir and mixed conifer forests in California, Oregon, and Washington; these characteristics include the number of old growth trees, which are likely to be at least 150 to 250 years old, as well as the number of snags and down logs.

The most recent systematic estimate of old growth coastal redwood forests found that they occupied 208,000 acres (9.8%) of their natural range as of the late 1980's. (Fox, 1988) The most recent, comprehensive estimate of old growth across California indicates that there is a total of 2.5 million acres of old growth on all ownerships, for all

species. (Bolsinger, 1993) However, actual figures for ecological old growth are likely to be substantially lower than those provided by Bolsinger (1993) and Fox (1988). Bolsinger (1993) relies upon data from the early 1980's, and significant amounts of old growth have been harvested since then. Bolsinger (1993) also includes later seral stage stands which do not necessarily have ecological old growth characteristics. More recent estimates for coastal redwood suggest that only 76,000 acres of old growth may be left, or 3.5% of the redwood's natural range. This includes roughly 9,000 acres on private lands, some of which are "ancient forests" which have never been altered by modern human activity.[xiii]

Carbon Storage

Maintaining the forest landbase and improving forest management will also be important components of a comprehensive strategy to address global warming. It is now largely accepted that the earth's climate normally undergoes slow changes, and that contemporary industrial activity is likely to accelerate these changes, possibly to the point where both human and non-human communities will have difficulty adapting. The release of unnaturally large amounts of carbon dioxide is one of the primary causes of these changes.[xiv] Managed properly, California's forests, particularly its redwood, Douglas fir, and ponderosa pine forests, have the capacity to help remove carbon dioxide from the atmosphere, and to store it for significant periods of time, helping to mitigate this cause of global warming. The role private forestlands play here is particularly important -- much of California's most productive conifer timberlands, which are most effective at sequestering atmospheric carbon, are located at lower elevations on privately owned parcels.

[xiii] Compiled from multiple sources. Figure includes 49,000 acres on State Parks, 150 acres on Jackson State Forest, 240 acres on Muir Woods National Monument, 15,790 acres on Redwood National Park, 2,000 acres on Six Rivers National Forest, 4,700 acres owned by Pacific Lumber, and an estimated 4,000 acres owned by other private landowners.

[xiv] Other gases which contribute to the "greenhouse" effect include methane, chloroflourocarbons, and hydrocarbons.

III. FOREST RESOURCE TRENDS AND THREATS

Historical Role of California's Forests

It has been estimated that roughly 300,000 to 1 million Indians comprising 56 distinct ethnic groups lived in California prior to the region's colonization by Europeans. Many of these groups inhabited forested areas, relying upon salmon, acorns, deer, and other abundant sources of food. (FRRAP, 1988; Foster, 1994; Moratto, 1985) Their harvest of winter-run Chinook in the Klamath-Trinity Basin has been estimated to be at least 50,000 pounds per year. (FRRAP, 1988) A variety of forest products were used, including wood for arrow shafts and housing, grasses for baskets, and minerals for stone tools and metals. The north coast civilizations also used redwood canoes to hunt seagoing mammals and fish. (Gould, 1985)

California's mineral, timber, and wildlife resources also provided the foundation for development of the state as we know it today. Commercial redwood harvests began with the growth of coastal cities in the 1820's, and increased with statehood and rapid immigration. Demand for mining and building materials spawned by the California and Nevada gold rush of the late 1840's and '50's intensified harvests in the north coast and the Sierra Nevadas. Cattle and sheep grazing in the Sierra Nevada was also established in response to miners' demand for meat, and some areas were burned to provide additional forage. (FRRAP, 1988) Riparian forests in the Sacramento Valley and along the lower Colorado River were also cleared during this time to provide agricultural land and fuel for steamships. (SLC, 1993) Statewide, timber harvests increased from 20 million BF in 1849, to 320 million in 1869, and to 700 million in the 1890's. (FRRAP, 1988)

Anadromous fisheries comprised another key food source for miners and other American settlers in the late 1800's and early 1900's until dam construction, watershed impacts from placer mining and timber harvesting, and overfishing began reducing stocks. At their peak, the Klamath and Sacramento River Basins yielded 1.4 and 10 million pounds per year, respectively. Steelhead were also abundant in most of the other larger streams which flowed to the ocean. (FRRAP, 1988; SLC, 1993) Tule elk, pronghorn, bighorn, and other game species were also used heavily for food until hunting drastically reduced their populations and, in the case of the California grizzly, the State animal, led to its extinction in 1925.

The San Francisco fire of 1906 and the advent of mechanized logging led to increased harvest of north coast redwoods again in the early 1900's. Statewide, timber harvests peaked at 6 billion BF in 1955, when the relative depletion of old growth forests on private lands began to shift the timber industry's focus to public lands. (FRRAP, 1988)

Projected Use of Forested Areas -- An Overview

Of California's privately owned conifer and hardwood forestlands, an estimated 3.4 million acres are owned as industrial private forestlands (IPF) and 10.8 million as non-industrial private forestlands (NIPF). The CDF defines IPF lands as those owned by individuals or companies which own 5,000 or more acres of forestland nationwide, and either own a wood processing plant, or employ a permanent forestry staff and a system of regular timber harvests. NIPF lands are defined as those owned by private, non-IPF owners.

Traditionally, NIPF owners use their lands for various purposes, including short-term income from timber production or grazing, long-term investment appreciation, the pleasures of "working the land," residences, and recreation. (Romm *et al*, 1983) However, the conversion of NIPF forestlands to nonforest habitats and land uses is likely to continue as satellite cities and bedroom communities expand into forested regions, and as more people look to retire or develop second homes in remote areas. Rising stumpage prices increase the profitability of sawtimber harvests, and thus create an incentive for NIPF managers to increase their harvest levels.

Since IPF lands are owned by commercial forestry companies, it is usually assumed that they will continue being managed primarily for timber outputs. The intensity of timber management on IPF lands is likely to increase in response to changes in technology, the relative depletion of older age classes on public and private forests across the west coast, and in some cases, rising stumpage prices. Managers faced with lands which are more depleted of sawtimber stocks are also likely to consider shifting toward whole tree logging and other techniques which maximize biomass use and provide chips and pulp for paper, overseas markets, and new manufactured board mills. These types of intensive management practices are more likely to change forest cover types from their native composition and to impact soil productivity. While substitution of non-timber building materials and increased wood products recycling could theoretically help meet short-term demand for timber products and protect long-term timber supplies in theory, long-term supply and demand trends are uncertain.

Mill owners are likely to continue looking to NIPF forestlands for additional timber supplies for at least the next twenty years. Consequently, conversions of NIPF forestlands to nonforest habitats and land uses through subdivisions and development projects will not only impact traditional forest uses on those lands, but may also increase timber production demands on remaining private forestlands. In some cases, IPF forestlands which are depleted of merchantable timber may also be sold-off for subdivision and development, further reducing the forest landbase. This trend has already been documented on prime west coast timberlands. (King, 1994)

While some IPF and NIPF ownerships will be exceptions to the land use and resource management trends discussed here, generally the trend towards more intensive timber harvest and different types of conversions on both IPF and NIPF forestlands will have negative impacts upon long term timber productivity, wildlife and fisheries habitat values, and other traditional forest uses. Of course other market trends may come into play. The emerging market for other non-timber forest products, for example, is expected to continue growing. However, private landowners' ability to respond to this market could be limited by their management decisions and priorities, as well as by nonforest development impacts and decreases in land parcel sizes.

In the face of current and projected land use trends, the California Forest Legacy Program can provide private forestland owners with important incentives to maintain the forest landbase for the full range of traditional uses through conservation easements, and to help to implement ecosystem management and biodiversity conservation.

Ownership Patterns and Trends

Of California's 14.2 million acres of privately owned conifer and hardwood forestlands, an estimated 24% are owned as IPF lands and 76% as NIPF lands. (FRRAP, 1988) The portion of these forestlands which are considered to be commercially productive as timberlands is more evenly distributed -- IPFs hold an estimated 3.8 million acres, while NIPFs hold 3.4 million. (FRRAP, 1988) Softwood timber stocking is also roughly comparable amongst ownerships in terms of sheer volume: IPF timberlands contain 50.2 billion BF, while NIPF timberlands contain 48.2 billion BF.[xv] (Powell *et al*, 1993) However, as discussed below, typical stand ages, tree diameters, and growth rates may be less consistent among IPF and NIPF ownerships.

Ownership of IPF forestlands is heavily consolidated, partly by definition. Under CDF's definition of IPFs, there are thirty IPF owners in California, seven of which own more than 250,000 acres each. (Rinehart & Associates, 1993; SPP, 1994a) By contrast, there are an estimated 60,000 to 100,000 NIPF owners across the state. (FRRAP, 1988)

However, a large proportion of NIPF forestland is also held by a relatively small number of owners. As of the early 1980's, 471 NIPFs in 15 northern California counties controlled 77% of the state's NIPF forestlands.[xvi] Of these northern NIPFs, corporate ownerships, including realty and investment companies, accounted for only 1% of the

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[xv] These figures are based upon the international quarter inch rule. NIPF timberlands contain significantly more hardwood sawtimber, however. NIPF lands include Indian lands here.

[xvi] These counties were Del Norte, Humboldt, Mendocino, Sonoma, San Mateo, Santa Cruz, Siskiyou, Trinity, Plumas, Sierra, Yuba, Nevada, Placer, El Dorado, and Alpine.

NIPFs, but held 15% of the land. (Romm *et al*, 1983) Ownership of different parcel sizes follows a similar pattern. While the average ownership size is 37 acres, 1% of northern California NIPF owners hold 33% of the acreage held in ownerships larger than 1,000 acres. (Romm *et al*, 1983) Statewide, 36% of the NIPF acreage is held in parcels of 1,000 acres or larger. (SPP, 1994a)

Several sources have tracked and projected changes in ownership of those forestlands which are considered commercially productive timberland. According to Powell *et al*, (1993) and USDA (1990), the amount of timberland held by IPFs has increased significantly since the 1950's, from 2.2 million acres to 3.3 million, but is expected to decrease to 1950's levels again over the next few decades. The amount of NIPF timberland, on the other hand, has declined steadily since the 1950's, and is expected to continue doing so, from 6.0 million acres to 3.2 million. (See Appendix C, Table II, for more detail.) While some of the decrease in NIPF ownership is due to purchases made by IPFs, the net losses in total private timberland acreage are most likely due to forestland conversions.

Forestland Conversions

Introduction

As noted in Section I, the Task Force has determined that the threats to private forestlands which are of greatest concern to the Program include impending danger or harm to forestlands and their resources from population and development pressure, and past management practices which inadequately protected the forest resources. These threats are, in large part, embodied in forestland conversions which fragment the forest landscape, impact adjacent timberlands and wildlife habitat, and reduce the ecological productivity of much larger areas. Forestland conversions have altered California's landscapes substantially since the advent of European settlement. A comprehensive survey of land use changes from 1950 to 1980 found that 837,000 acres of forestland were converted to agricultural or urban uses, including 220,000 acres of conifer forestland and 617,000 acres of hardwood forests. Even greater amounts were converted prior to 1950. (FRRAP, 1988)

One of the more commonly recognized types of forestland conversion occurs where forestlands are used for non-forest uses, particularly those which alter the landscape in a relatively permanent fashion, like residential development. Subdividing and/or developing forestland parcels can have a significant impact on forest structure, on the condition and availability of forest resources, and on opportunities for traditional forest uses. Poor forest management practices have had similar effects. In some areas, for example, old logging roads were built on unstable slopes, or utilized poorly designed

stream crossings, leading to the types of erosion and sedimentation which are contributing to contemporary fisheries problems as well as loss of forest productivity.

Several useful distinctions between conversion types can be made. As used in this AON, the term "development conversions" refers to conversions which involve the intentional development of forestland parcels for non-forest uses, such as residential or commercial subdivisions. "Parcelization" refers to subdivisions which occur without immediate additional non-forest development. Finally, "cover type conversions" are longer-term changes in forest species composition, forest structure, and other forest conditions which are more closely related to forest management than to subdivision and/or development *per se*. Each of these three types are discussed below. In practice, many conversions involve a mixture of one or more of these conversion types.

Development Conversions

Development conversions appear to be steadily increasing in many parts of California. According to CDF's timberland conversion permit (TCP) system, the rate at which conifer timberlands are being converted has been increasing steadily since the early 1970s, and recently doubled from an average of 898 acres per year between 1979 and 1981 to 1,623 between 1991 and 1993. Nine counties have experienced ten or more conversions since 1984.[xvii] CDF also tracks the number of three acre forestland conversions for housing construction and other activities which are exempt from CDF's conversion permit process. In 1993, 2,227 such exemptions were noted. (Bayless, 1994a) As discussed below in Section IV, CDF requires landowners to obtain a TCP when they convert timberland to a use other than the growing of timber; in practice, the permit process applies to the conversion of forestlands dominated by commercial conifer species.[xviii] (Bayless, 1994b)

The causes of the conversions which CDF has tracked through the TCP process are varied: the new uses include grazing and agriculture, mining, water developments, and residential subdivisions. However, subdivisions are becoming the dominant cause of the conversions reported in recent years, with the number of subdivision conversions having doubled since the late 1980's. Subdivisions accounted for an average of 69% of acreage for which conversion permits were issued between 1991 and

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[xvii] These are El Dorado, Placer, Amador, Siskiyou, Nevada, Humboldt, Plumas, Del Norte, and Calaveras. (Bayless, 1994a)

[xviii] See the *Z'Berg-Nejedly Forest Practices Act of 1973*. (Pub. Res. Code div. 4, ch. 8, s. 4621) On non-TPZ timberlands, conversions occur when future timber harvest will be prevented or infeasible because of land occupancy and activities, when stocking requirements will not be met within five years, or when there is a clear intent to divide timberland into ownerships of less than three acres. On TPZ lands, conversions occur when immediate rezoning is undertaken, except for conversion of three acres or less, of public rights-of-way, or of rights-of-way for construction of utility developments. (*California Forest Practice Rules*, Code of Regs., title 14, s. 1100 *et seq*)

1993, and reached 77% in 1993. This contrasts with a yearly average of 21% between 1969 and 1993. (Bayless, 1994a)

Since much of the development in forestlands occurs at low to mid-elevations, particularly in the Sierra Nevada, development conversions of hardwood forests are likely to be occurring at an even higher rate than the predominantly conifer conversions tracked by CDF. As of the late 1980's, 279,000 acres of woodlands were already in areas slated for development. (Bolsinger, 1988) As with the commercial forestland conversions which CDF tracks, the causes of hardwood forest conversions have also been changing. Between 1945 and 1973, efforts to clear land for grazing accounted for 90% of the conversions, while the development of water reservoirs, powerline rights of way, and residential areas accounted for the remainder. However, from the late 1960s to the early 1980s, residential, commercial, and highway developments accounted for 85% of the conversions. (Bolsinger, 1988)

Due to statewide population growth, existing land use policies, and other factors, the potential exists for development conversions to continue increasing in forestlands of environmental and economic significance. Population and development pressures, for example, are being felt in a significant number of the counties most responsible for California's softwood timber production. Of the nineteen counties which each produced over 25 million BF of timber from private lands in 1993, thirteen are expected to have population increases of 25% or more by 2005, and six are expected to experience increases of over 40%. (TTD, 1994a; Finance, 1990) Likewise, of the forty-four counties which contain significant stands of oaks, thirty-one are expected to have population increases of 25% or more, and twelve are expected to experience increases of over 40%. (FRRAP, 1993; Finance, 1990) Appendix C, Figure IV, shows where housing densities have already reached one house per 40 acres to one per 160 on California's forestlands, based on CDF's CalVeg data. Appendix C, Table III, also ranks counties by the level of expected population growth.

Based upon trends studied through the mid-1980's, CDF projected that 339,000 acres of forestland, including 216,000 acres of hardwoods, and 123,000 acres of conifer forest, would be converted in one way or another between 1980 and 2021. (FRRAP, 1988) However, the ownership projections developed by Powell *et al* (1993) and USDA Forest Service (1990) suggest that privately owned commercially productive timberlands alone may decrease by amounts on the order of 2.0 million acres, or 26% of total timberland in California, by 2040. This estimate does not include the 7.0 million acres of forestlands which are not considered "timberlands", but which still encompass important non-timber forest resources.[xix] As current development patterns and CDF's

[xix] Powell *et al* (1993) and USDA (1990) also project that publicly owned timberlands in California will decline by as much as 700 thousand acres. These projections may include some forestlands in Hawaii.

projections suggest, conversion levels for oak woodlands and other non-timberland NIPF lands are likely to be even greater.

A variety of factors affect a landowner's decision to convert their forest property, including personal preferences for different land uses and the relative profitability of converting the land to non-forest uses. Population increases and development patterns in traditionally rural counties reflect both local population growth and an influx of people from urban areas attracted by the quality of life and business climate. Strong demand for building materials and wood fiber is likely to reinforce these demographic pressures by keeping stumpage prices high, making the liquidation of merchantable timber and buildable parcels even more attractive.

Tax policies can either help maintain forest resources or contribute to conversions. The unified estate tax system which requires appraisal of forestland at its "highest and best use" and not its forestland use value also serves as a barrier to maintenance of the forestland base. The heirs of forestland owners frequently find it necessary to harvest their timber prematurely and excessively, or to subdivide the property to raise cash to pay estate taxes which can account for up to 55% of an estate's value. Consequently, conversions are likely to increase with the transfer of forestland that will occur over the next twenty years with the aging of NIPF owners, whose average age is now in the sixties.[xx] (Romm *et al*, 1983)

As discussed in Section IV, tax policies are also affected by the two State-initiated land use zoning policies which are intended to help curb forestland conversions: the *Timberland Productivity Act* (TPA) and the *Williamson Act.* The TPZ required the designation of Timberland Production Zones (TPZ) by California counties, while the *Williamson Act* encouraged the designation of Agricultural Preserve Zones, many of which include significant amounts of hardwood forest.[xxi] Forestlands in either zoning are taxed at a lower rate than lands for which the "highest and best use" is development and other non-forestland uses. In return, some restrictions on subdivisions and / or development are applied to TPZ and Agricultural Preserves.

In general, placing forestlands in TPZ requires that the potential for production of forest products be maintained for the property. It is assumed that the forest soil types, preferential property tax treatment, and limitation on development of non-forest uses is sufficient to maintain that potential.

[xx] The average age of NIPF owners in 1983 was 50 years; assuming that the ownership patterns have not changed significantly, these owners will now be over 60 years old, on average.

[xxi] As of 1989, over 387 thousand acres of grazing land were enrolled in the *Williamson Act* in 13 counties. (CDC, 1989). Almeda, Glen, Humboldt, Lake, Placer, Plumas, Sacramento, San Luis Obispo, Santa Cruz, Siskiyou, Sonoma, and Tulare counties also indicated that significant amounts of hardwood rangelands were included in their *Act* lands. (PFT, 1994)

However, many of California's conifer, hardwood, and mixed conifer-hardwood forestlands are not zoned TPZ. While 99% of IPF forestlands were zoned TPZ as of the late 1980s, only 47% of NIPF forestlands were included in the zoning. (FRRAP, 1988) Property taxes on lands which are not zoned TPZ or as Agricultural Preserves may be based on non-forest uses such as residential development even when the current uses are forest based, depending upon county land use zoning and assessment policies. In such cases, the landowners may be faced with a higher tax burden, creating an incentive for them to intensify timber harvests, to develop the land for other uses, and/or to sell part of the property.

The effectiveness of TPZ designation can also vary over time. Landowners and local governments may remove lands from TPZ through one of two rezoning procedures. "Immediate rezones," which are tracked by CDF's timberland conversion permit process, occur when landowners rezone TPZ parcels in order to conduct non-forest development. Tax recoupment fees are then assessed on the parcel. Immediate rezones have totaled 49 to 521 acres per year over the last four years. (Bayless, 1994a)

Alternately, landowners may rezone TPZ parcels by requesting that the TPZ designation and preferential tax assessments on their parcels be canceled after ten years. The extent to which landowners have rezoned TPZ lands in this fashion varies. A number of counties have indicated that little if any TPZ land has been rezoned over the last ten years. However, several counties have experienced more significant levels of TPZ rezonings, in some cases with landowners rezoning over 1,000 acres in one year in anticipation of development projects.[xxii] (PFT, 1994)

The level of protection which TPZ designation provides forestland from subdivision and development conversions also varies significantly from county to county. Many counties allow development of oil wells, transmission lines, and additional residences on each TPZ parcel, in one case at densities up to one house per five acres. (See Appendix C, Tables IV and V.) As discussed below, minimum parcel sizes also vary significantly.

The development restrictions placed on lands participating in the *Williamson Act* also vary from county to county. The types of development permitted on each parcel are similar to those permitted on TPZ lands. (PFT, 1994) *Williamson Act* lands may also be

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[xxii] These counties include Del Norte, Humboldt, Lake, Placer, Sierra, Siskiyou, Sonoma, Tuolumne, and Plumas. Plumas County has had a rezone of 600 acres, Placer has had one of 1,000 acres, and Siskiyou has had one of 1,100 acres, while Sierra has had rezones totalling roughly 4,000 acres over 10 years. (PFT, 1994a)

rezoned through several processes, including non-renewal.[xxiii] Evaluations of the *Act* have found that landowners are likely to initiate non-renewal in anticipation of development opportunities, including in areas located at some distance from urban areas. While non-renewals were balanced by new enrollments at the statewide level during recent years, 10 to 70% *Act* lands in eleven counties are now undergoing non-renewal.[xxiv] This high turnaround suggests that the *Act* may be less effective at curbing conversions than simple enrollment figures might suggest.

While the *Williamson Act* plays a significant role in maintaining the state's agricultural landbase, it is not designed to protect forest resources *per se.* In most counties, cover type conversions such as conversion of oak woodlands to vineyards are allowed on lands enrolled under the *Williamson Act*;.

As discussed below and in Section IV, county land use policies which govern forestland conversions on non-TPZ and non-*Williamson Act* lands also vary widely, both from county to county, and among each county's land use zones. County planning departments generally require landowners to acquire permits for most types of infrastructure and building construction, for example, and some counties have tailored their permit process to help focus development away from resource lands and to lands where it is considered more appropriate. At the same time, counties have actively promoted subdivision and development on some of their forestlands by including them in areas slated for urban, suburban, or commercial development, or by providing minimum parcel size exemptions for landowners who engage in particular types of activities, such as vineyard development. (PFT, 1994a)

Parcelization

As lands change ownership, they are often broken into smaller parcels. This is evidenced by contrasts between the Sierra Nevada and the north coast. Fifty-eight percent of NIPF lands changed hands in the central Sierra Nevada from 1978 to 1988, and by the late 1980s, average parcel sizes were 15 acres. By contrast, average sizes in the north coast, where only 33% of NIPF lands changed hands, were 107 acres. (FRRAP, 1988)

While this process of creating new parcels, or "parcelization," does not in and of itself reflect on the quality of forest resource management occurring on that property, it can have several adverse effects on the maintenance of certain forest values and traditional

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[xxiii] Non-renewal occurs when a landowner notifies the county that they no longer wish to participate in the program; the program's tax benefits and development restrictions are then phased-out over a nine-year period.

[xxiv] These counties are Orange, Placer, Nevada, Riverside, San Bernadino, Contra Costa, Sacramento, Ventura, El Dorado, Alameda, and San Diego. (CDC, 1994a)

forest uses. Where parcels are divided to facilitate the construction of housing or other "developed" uses, parcelization brings with it increased roading, fencing, and vegetation changes, increased human and domestic animal populations, and other direct impacts to timber stocks, wildlife populations and habitat, water quality and other forest resources. Increased development in more remote resource lands also places a disproportionate fiscal and management burden on local governments and other bodies responsible for providing infrastructure and other public services.

In cases where such development is not immediately pending, creation of smaller parcels, especially those under 160 acres, can still reduce the land's capacity to be effectively stewarded for forest resources, in large part due to lost economies of scale. There are cases where large parcels of depleted forestland have been split into smaller parcels and the new owner-managers have restocked and improved forest stands, while limiting residential development. Nonetheless, it is important to recognize that many important wildlife species have wide ranges and require contiguous forest stands, and that their viability is threatened by the presence of domestic animals, vehicles, and other disturbances which are likely to increase with the parcelization of forestland. Forestland which has been fragmented is also more likely to be converted to nonforest uses in the future, even if it is well managed in the short term.

Parcelization is regulated to some extent by county land use and zoning policies which establish minimum parcel sizes for lands in different classifications or locations. These sizes vary widely, and are not always intended to curb parcelization or conversion *per se*, particularly when they are in residential, commercial, or transportation zonings. Minimum parcel sizes in "forest" zones, "resource management" zones, "conservation" zones, and similar zones tend to range from 160 acres to less than one acre. (PFT, 1994a) Some counties have implemented land use practices which may help offset the effects of parcelization in some cases. Development clustering, for example, is thought to help reduce the fragmentation of habitat and forest resources across the landscape by providing landowners and developers with opportunities to build higher density housing in return for "clustering" the houses in one location on a larger parcel.

While forestlands in TPZ or Agricultural Preserve Zones may receive some protection from outright conversion, they too are often subject to parcelization. Minimum TPZ parcels sizes vary by county, ranging from 160 to 40 acres in many counties. Exceptions down to ten acres and less are also available in some counties. Appendix C, Table IV, lists minimum TPZ sizes by county. Minimum parcel sizes for Williamson Act lands also range from 160 to 10 acres.

Forestland can also be subdivided below a county's minimum parcel sizes, including in TPZ or Agricultural Preserve zones, when landowners hold valid Certificates of Compliance (CCs) for parcel divisions which predate the zonings. Depending upon each county's method for evaluating CC claims, landowners can acquire CCs by

presenting parcel maps which show that their land is comprised of smaller parcels created prior to implementation of the county's General Plan. Valid Certificate-based parcel divisions are exempt from both the *California Environmental Quality Act* and county zoning requirements.

The potential impact of the CC process ranges from county to county. In some areas, the federal government gave 20 to 40 acre parcel "patents" to railroad companies and other people during the 1800's to encourage development and settlement. Smaller parcels were also given away with newspaper subscriptions in Santa Cruz and Marin Counties. At least twelve counties have received significant applications for CCs and consider them an important issue; six others indicate that CCs have the potential to be an issue.[xxv] In one particularly striking case, Mendocino County was required to issue CCs on over 99,000 acres of TPZ and agricultural preserve land between 1988 and 1990 alone, including on 42,000 acres of IPF forestland which were depleted of timber stocks. (Mendocino Board Supervisors, 1990) One observer estimated that 300,000 to 400,000 acres of forestland might be eligible for unregulated CC subdivisions in Mendocino County alone. (Passof, 1990)

Cover Type Conversions

As recognized by the SFSCC, longer term changes in forest species composition, forest structure, and watershed conditions have also resulted from past forest management practices, conversion of forestland to agricultural uses, and other factors. Whether conducted as part of parcel subdivision and development activities, or conducted on their own as part of commercial or non-commercial timber operations, forest management practices still have the potential to foster significant changes in forest types, ecosystems, and landscapes.

In some cases, past management practices have increased the potential for catastrophic fires which are capable of significantly altering forest cover. Sporadic, small scale or lower intensity fires were once a frequent and natural part of the ecosystem processes of many forest communities throughout California and were the product of both natural causes and management by some American Indian groups. In many cases, these fires helped manage understory brush levels, creating more open forest structures. Large mature trees, such as ponderosa pine or redwood, achieve some degree of fire resistance while these fires tended to burn small patches of firs, hardwoods and other less fire-tolerant species. These fires also made it possible for many native grasses to flourish. In both cases, natural fires helped maintain the

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[xxv] Alameda, Amador, Butte, Calveras, Lake, Los Angeles, Mariposa, Mendocino, Placer, Napa, Sonoma, and Tuolumne counties have all received significant CC applications in recent years, including one for 2,000 acres of TPZ land in Sonoma County. Madera, Nevada, Santa Cruz, Tehama, Glen, and Plumas indicated that CCs are a potential problem. (PFT, 1994)

diversity of seral stages, tree species, and wildlife habitats across broad forest landscapes. (Jones & Stokes, 1992)

However, over the past few decades, a combination of forest management trends and fire suppression activities have created a situation where more catastrophic fires are likely to occur on public and private forests. Even-aged timber harvest and regeneration practices have encouraged the growth of forest stands dominated by mixtures of relatively young, closely spaced trees and understory brush. Fire prevention and suppression programs have also allowed forests to accumulate large amounts of understory brush.

These conditions provide fires with unusually high fuel loads. The extended dry period affecting California during the last decade has only exacerbated this situation. Consequently, fires started by people, lightning, machinery, power lines, and other causes are likely to affect larger tracts of forestland than in the past. They are also more likely to burn at higher temperatures, degrading soil productivity, and to "climb" up through the low tree canopies found in younger, even-aged forests, killing more trees than would be typical of fires in more diverse stands with older age classes. Such fires are also more likely to affect a larger percentage of those habitat types and natural communities which are already scarce.

CDF devotes considerable public resources towards controlling fires on private forestlands. Forestland conversions that involve housing construction and other developed uses impede efforts to use prescribed burns and return to more natural conditions, where smaller, sporadic fires keep fuel loads manageable without harming the overall forest structure. New homeowners may be especially resistant to the use of controlled, prescribed fires. Appendix C, Figure IV, depicts areas in the wildland / urban interface where the risk of catastrophic fires is high.

Excessive timber harvest and inadequate regeneration also have the potential to alter forest species mixes, simplify forest composition and structure, and reduce the availability of various forest resources. An analysis of annual softwood harvests in California from 1952 to 1986 on IPF timberlands from 1952 to 1986 indicates that harvest was 273% of net annual growth.[xxvi] (USDA, 1990) These figures suggest that at least some IPF lands are likely to be depleted of merchantable softwood sawtimber inventory. Such depletion may be evidenced by the relative increase of hardwood species stocks in parts of the redwood region, where the native species composition, habitat types, and the availability of high quality softwood timber supplies has been altered. Overcut forestlands are also among those which are most likely to be sold-off, subdivided, and developed for non-forest uses. (PFT, 1994b)

[xxvi] Harvests on NIPF timberlands during this period were 110% of growth.

Past management practices have also affected soil productivity in some areas. Past harvest practices were more likely remove large proportions of the native vegetation, litter, and detritus, exposing mineral soil and depleting nutrient sources, nitrogen fixing plants and fungi, and shade sources that would normally protect some types of seedlings and the soil. Compaction from heavy equipment has also reduced soil fertility in some areas. (DANR, 1984; FRRAP, 1988) Intensive vegetation removal also allows soils to dry, and to be eroded by runoff and landslides. In some cases, successive timber harvests may have changed the environmental conditions on forestlands such that regeneration of certain tree species is no longer possible. (FRRAP, 1988)

Historical management practices are also affecting fisheries and other watershed values. Roads constructed on steep slopes, in highly erodible soils, and without proper erosion controls and stream crossings, for example, are more likely to erode, contributing to sedimentation in salmon spawning beds and other water quality impacts. It has been estimated that roughly 1.4 million acres of nonfederal, timbered land in California are likely to be experiencing surface erosion. (FRRAP, 1988; Whiting, 1994)

Forage production and livestock grazing are a valuable traditional forest use in many woodland areas, and can contribute to efforts to control certain vegetation types and fire fuel loads. However, overgrazing in sensitive areas also contributes to significant changes in forest composition and structure. Cattle, horses, and sheep can graze upon or trample the young seedlings which would normally be replacing California's riparian vegetation and aging oaks.

The accidental and / or intentional introduction of non-native plants and plant pests to California's forestlands can also contribute to conversions of some forest types. Plants and plant pests which are foreign to California often lack natural predators or outcompete native species. Exotic grasses, for example, are partly responsible for the poor regeneration of California's oak stands. (Standiford, 1995) Many exotic plant pests, such as the Asian gypsy moth, Siberian larch canker, and pine shoot beetle are also capable of reaching epidemic proportions and destroying important conifer and hardwood species over broad areas. On a regional scale, accidental introductions are likely when inadequately treated wood products and other items are imported from temperate forests in Asia, South America, and other overseas locations. (USDA, 1994) On a local level, the spread of exotic species may increase with development, roading, increased vehicular traffic, and other activities which can transport the exotic species or which help open the forest structure to them.

<u>Projected Loss of Traditional Forest Uses and Environmental Values</u>

The entire spectrum of forest resources and traditional forest uses are threatened by the cumulative effect of development conversions, parcelization, and cover type conversions. Impacts to these resources will vary from site to site of course, depending upon the nature of the conversion and its intensity, and some areas will be affected far less than others. However, the indicators discussed above suggest that overall conversions are likely to be significant in California for the forseeable future.

All of California's sixteen forest types are found in areas experiencing population and development pressures. Private landowners hold over 75% of four of these forest types -- coast redwood, montane hardwood-conifer, valley-foothill hardwood, and valley riparian. While hardwood systems may be most threatened because development pressures are greatest at lower to mid-level elevations, ownership patterns also play a role. Statewide, 82% of hardwood rangelands are privately-owned, and less than 4% are protected. (FRRAP, 1993) NIPF owners own at least 25% of all four hardwood types, as well as coast redwood. In southern California, pinyon-juniper, juniper, and mixed conifer forests are most threatened. (FRRAP, 1988) Because of their relative rarity, Engelman oak, valley oak, riparian, late successional, and old growth ecosystems are also particularly vulnerable to conversions and catastrophic fires.[xxvii] (Berbach, 1994)

Observers tend to agree that NIPF lands are most threatened by development conversions. Ninety percent of the commercial timberland which was converted between 1975 and 1985 was NIPF land. (FRRAP, 1988) Most of the conifer and hardwood forestlands which are not designated as timberlands, as well as a larger proportion of forestlands which are not zoned TPZ are also NIPF lands. As of the early 1980's, the percentage of NIPF lands zoned TPZ in each county which had at least 25,000 acres of NIPF land ranged from 0.06 to 61.76 percent, with an average of 22.3 percent. (Romm *et al*, 1983)

With the reduction of timber harvests on Federal lands and the recent declines in timber stocking rates on IPF lands, NIPF forestlands are playing an increasingly important role in California's softwood timber production. The most recent comprehensive forecast projects that IPF softwood harvests will fall from 1986 levels by an average of 35% between 2000 and 2040, while NIPF softwood harvests will increase by 56% over the same time periods.[xxviii] (USDA, 1990) As of 1988, only 40% of California's wood products consumption was being met by in-state sources, and this deficit is likely to widen if conversions continue as expected. (FRRAP, 1988)

[xxvii] Because of fire adaptation, the vulnerability of old growth stands in the Sierras is somewhat less pronounced, though it remains significant. (Burbek, 1994.)

[xxviii] IPF harvests in 1986 were 452 million cubic feet; projected average harvests between 2000 and 2040 are 294 million cubic feet. NIPF figures for the same periods are 120 and 187 million cubic feet. (USDA, 1990)

Development conversions and parcelization threaten the capacity of these NIPF lands to be managed for long-term timber productivity as well as other forest resources, particularly when development of housing and related uses is preceded by intensive timber harvests which deplete long-term timber stocks.

All conversions tend to degrade wildlife habitats and biodiversity through increasing road construction, vegetation changes, disturbances from people and domestic animals, and fragmentation of habitat areas and migration corridors. As fragmentation isolates habitat areas and increases the amount of "edge" habitat accessible to exotic species, it renders the remaining habitat areas unsuitable for certain species which require larger or more intact forestlands. Development-related impacts can also negatively affect biodiversity when forest structures are simplified, when key habitats or key species are lost, when exotic plant, fish or animal species or pests are introduced, or when populations are isolated from each other.

The quality and quantity of water provided by forested watersheds is also directly linked to land use patterns within those watersheds. Conversion of forested areas to roads, housing, and other developed uses typically removes the vegetation which helps maintain soil stability and water retention, thereby increasing runoff, erosion and sedimentation during wet seasons, while often reducing water flows during dry seasons. In cases where forest cover type conversions reduce summer flows, the concentration of pollutants and effluents released into streams and rivers will increase, further exacerbating water quality and fisheries impacts.[xxix] Historically, poor forest stewardship practices, such as timber harvests which failed to leave riparian buffers or which used unstable stream crossings, have had similar effects.

Theoretically, public access to fish and wildlife or recreational resources could improve with ownership changes if the new owners are more amenable to such uses. However, subdivisions comprise an increasingly large percentage of forestland development conversions, and homeowners are unlikely to grant access where their privacy will be disturbed. Development conversions and some cover type conversions also degrade California's scenic resources by breaking up open spaces; by increasing the demand for new roads, power lines, and other infrastructure projects; and by impacting the viewshed of adjacent scenic areas, roadless and wilderness areas, national parks, and other attractions. While cultural and historical impacts are more site-specific, development conversions and parcelizations which occur on significant cultural and historical sites are likely to degrade the condition of those resources and / or limit access to them.

[xxix] Increased winter streamflows tend to destroy the structural components of aquatic habitats, increased sediment deposition suffocates spawning beds, while decreased summer flows leave both juvenile and returning adults stranded. Invertebrates, including those which are food sources for salmonids, are also highly vulnerable to such impacts.

IV. CALIFORNIA'S CONSERVATION PROGRAMS

Introduction

The following section provides an overview of the State, local and non-governmental policies and programs which are most directly related to California's private forestland base, to forestland conversions, and to forest resource conservation. These existing policies and programs provide important basic protections for many forest resources of private and public significance. The additional incentives provided through the Forest Legacy Program will complement these programs and laws. By voluntarily establishing conservation easements through the Program, participating landowners can realize economic benefits for stewardship practices which exceed those required by law.

State Policies and Programs

The *Timberland Productivity Act of 1982* (TPA) established the State program that is most directly focused on maintaining the forest landbase.[xxx] The TPA encouraged counties to designate Timberland Production Zones (TPZ) containing conifer timberlands. Since property taxes on forestlands zoned TPZ are based solely on their timber production value, the landowners usually receive a substantial tax break. In return for this incentive for landowners to keep their lands in production, local TPZ ordinances restrict non-forest development projects on TPZ lands. While the TPA has been one of the State's more effective programs for maintaining the forest landbase, it provides a highly variable level of protection from different types of conversions, with some counties allowing substantial levels of non-forest development and parcelization on TPZ lands. A large proportion of NIPF forestlands, both conifer and hardwood, are not zoned TPZ. Owners may also remove their lands from TPZ by paying a tax recoupment fee and receiving an "immediate" rezone, or by applying for a ten-year rezone. While relatively little land has been removed from TPZ, there are some exceptions. (For more detail on the TPA's implementation, see Section III.)

While the TPA and local TPZ ordinances do not directly address cover type conversions and the maintenance of forestland for non-timber values such as fish and wildlife habitat, these concerns are intended to be addressed on commercial timberland by the *Forest Practices Act* (FPA). The FPA and its administrative rules establish timber harvest regulations and other requirements that are meant to assure that "...where feasible, the productivity of timberlands is restored, enhanced, and maintained...," and that "...the goal of maximum sustained production of high-quality timber products is

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xxx *California Timberland Productivity Act of 1982*, Gov't Codes s. 51100 *et seq.*

achieved while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment, and aesthetic enjoyment."[xxxi]

The FPA also provides CDF with the authority to regulate some types of conversions by requiring that landowners obtain a Timberland Conversion Permit (TCP) when they convert TPZ and non-TPZ timberland to a use other than the growing of timber, with the exception of non-TPZ subdivisions which have been approved by the local government.[xxxii] Although the TCP process applies only to commercial "timberland", the number of TCP's issued for subdivisions has still been increasing, as noted in Section III.

The *Williamson Act* is intended to function like the TPA by reducing the property tax burden on farmers and ranchers in situations where their taxes are increasing due to development trends.[xxxiii] In return, the landowners sign a contract stating that their lands will be available for agricultural production and related uses for at least ten years. A significant amount of California's hardwood forests, as well as some smaller amounts of conifer forest, are on land enrolled under the *Act*. However, as discussed in Section III, the *Act* allows relatively small minimum parcel sizes, and does not address cover type conversions or protections for environmental values, since its purpose is the maintenance of agricultural land. A substantial turnover in lands enrolled under the *Act* also occurs, including where landowners anticipate development opportunities.

The USDA Forest Service Forest Stewardship and Stewardship Incentive Programs, which CDF administers, may help offset potential conversions by subsidizing forest resource conservation and forest productivity enhancement practices, and by encouraging development of long term management plans. They provide federal cost-share funds to NIPFs to help them develop Stewardship Management Plans and other projects. The Federal Forest Incentives Program and the California Forest Improvement Program also provide cost-share funds to NIPFs to help them conduct site improvements, restocking, and in the case of the California Forest Improvement Program, management plans. However, these programs are not designed to prevent conversions in particular.

The *California Environmental Quality Act* also establishes some procedural requirements for conversions regulated under the TCP process, and for subdivisions. In the case of TCPs, CDF or the local government may issue a negative declaration. Negative declarations are usually issued for subdivisions as well, along with any requirements for appropriate mitigation. Larger subdivision projects may require a full

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xxxi Pub. Res. Code, div., ch. 8, s. 4513.

xxxii Pub. Res. Code, div., ch. 8, s. 4621.

xxxiii *Land Conservation Act of 1965 (Williamson Act)*, Gov't Codes s. 51200 *et seq.*

environmental impact report, which can help direct development to more appropriate locations, or help mitigate impacts to some important resources. While the *Act* is an important part of California's land use and natural resource policy toolkit, it has not been applied to promote forest conservation *per se,* beyond certifying the FPA as a "functional equivalent" of the *Act*. To the extent that CEQA and the FPA increase transaction costs for high impact activities, they may create an incentive for better resource management. However, this incentive may not be sufficient to affect more lucrative projects.

The State of California has also recognized the need to promote improved ecosystem management throughout the state. Ecosystem management and regional habitat conservation planning can help conserve and restore biological diversity across California while helping to ensure the long-term sustainability of natural resource productivity. However, these planning processes must be designed and implemented with these goals as priorities. To date, the State has participated in the Sierra-Nevada Ecosystem Project, formed the Executive and Regional Councils on Biological Diversity, developed the California Environmental Resources Evaluation System on-line information system, and created the *Natural Communities Conservation Planning Act.* Since implementing ecosystem management and biodiversity conservation plans across landscapes requires a multi-jursidictional approach, California's proposed Forest Legacy Program can complement the State's other efforts by providing private forestland owners with new opportunities and incentives to protect their forestlands and specific resource values within these contexts.

Other State policies concerned with private forestlands and forest resources include the *Timber Yield Tax Law*. Additional State programs include CDF's Fire Safe Program, the water quantity and quality monitoring activities of the State Lands Commission and Water Resources Control Board, and various programs managed by the DFG, including the Natural Diversity Data Base and cooperative habitat management agreements with landowners and other agencies.

Local Policies

Local government policies which directly affect forestland conversions fall into two categories: county general plan goals and policies, which are implemented through land use zoning and ordinances; and county implementation of the TPA and *Williamson Act*. The level of protection afforded the forest landbase and environmental values on forestlands by these local policies is highly variable, both among counties, and within different areas in each county. As noted in Section III, county zoning policies range from providing relatively strong protections for forestlands located in open space and resource land zones, to having no protections for forestlands. Minimum TPZ parcel sizes also vary and most counties allow divisions below these minimums under certain

conditions. While low minimum sizes may have helped increase landowner inclusion in TPZ, they can also increase the risk that larger parcels will be subdivided. Section III also discusses situations where Certificates of Compliance pre-empt minimum parcel sizes.

Counties can direct development activities on forestland by establishing development restrictions in their TPZ ordinances, and by reviewing and regulating development permits for infrastructures, housing, and other projects in non-TPZ zones. These development restrictions vary from county to county, and many cases allow significant levels of forestland conversion. While development projects on parcels which have Certificates of Compliance are also subject to regulation through building codes, these regulations can only ensure that non-forest developments meet public safety standards, and do not necessarily protect forest resources from parcelization or development. Counties may also petition the State Board of Forestry to implement local rules governing forest management under the FPA. In addition, a few counties have established programs to protect agricultural lands and open space through purchasing conservation easements, though these programs are not specifically oriented towards protecting forestland or forest resources.

Non-Governmental Organizations

Along with other non-governmental organizations concerned with land management and conservation, there are at least 90 land trusts currently operating in California, many of which have experience establishing and monitoring conservation easements on forest and agricultural lands. (TPL, 1994) Land trusts are non-profit charitable organizations dedicated to helping private landowners achieve the voluntary preservation of their lands' natural resources for the public benefit. They typically use conservation easements as a cost-effective, site-specific tool. Land trusts' objectives may range from open space preservation to habitat conservation. Organizations like land trusts can increase the effectiveness of programs like Forest Legacy by providing an outside source of expertise, by providing landowners with information about the Program, by holding tax-deductible conservation easement donations, by helping to monitor easements, and other activities. Programs like Forest Legacy can also increase landowners' opportunities to work with land trusts and similar organizations by providing funding for easement purchases, resource assessments, easement closing costs, and other costs related to the donation or purchase of conservation easements.

V. OPERATION OF THE STATE PROGRAM

Introduction

California's Forest Legacy Program is designed to facilitate the cooperative efforts by private forestland owners, land trusts and other non-profit organizations, local communities, State and local government agencies, and the Federal government to protect California's environmentally important forest resources. The Program provides an opportunity for forest landowners to voluntarily protect significant forest resources by selling or donating conservation easements which identify those key resource values and establish appropriate management goals and land use restrictions. (Section I describes conservation easements in detail.) As a result, the Program will also help maintain the forest landbase, forest resources and opportunities for traditional forest uses for future generations. Participating landowners may use other land protection means in special cases, such as when they wish to sell or donate fee title or a reserved interest deed. However, conservation easements are the Program's preferred method of forestland protection. Acquisitions will only be from willing landowners in all cases.

Since California's Program is a cooperative state-federal program formed under the Federal *Cooperative Forestry Assistance Act of 1990*, several aspects of the State Program are defined by the *Act* and by the *Forest Service Guidelines* for the national program. These include some of the parcel eligibility criteria, allocation of easement management responsibilities, and the Program's cost-share requirements. However, California has responsibility for designing all other aspects of the State Program, and interested local governments and non-governmental entities can play a significant role in implementing the Program.

This section describes how landowners can use the Program to establish conservation easements; how conservation easements will relate to the landowner's management activities; how easement monitoring will be handled; how the Program will be funded; and how the Program will operate more generally.
Additional details of how the Program will be implemented in California will be established in an umbrella Memorandum of Understanding (MOU) between CDF and the USDA Forest Service. The MOU will include a statewide program management plan which coordinates objectives and responsibilities for easement monitoring among landowners, the State, Forest Service, and land trusts. Additional MOUs addressing different parties' responsibilities will also be developed for each easement project, thereby becoming an amendment/addition to the umbrella MOU.

Program Outreach

CDF provided opportunities for the public to learn about and comment on the Program during its initial sensing and scoping processes and during the subsequent public involvement process for the AON. CDF will continue to use a variety of communication strategies to inform forestland owners about the Program and how they can participate. CDF will work cooperatively with local agencies and other organizations which have compatible outreach programs, such as land trusts, Resource Conservation Districts (RCDs), University of California Cooperative Extension, county planning departments, and other organizations which support particular FLAs. CDF will also utilize its toll-free help line, newsletters, press releases, public meetings, articles, and field staff, as well as landowner mailing lists provided by participating counties. It is also expected that CDF will work with participating landowners who may be interested in promoting the Program to their peers.

Landowner Participation -- Application, Selection, and Easement Development

The process of establishing easements through the Program begins with interested landowners. Eligible forestland owners who want to participate in the Program may submit applications to CDF at any time. The application provides information which enables CDF, the SFSCC, and the Forest Service to verify the parcel's eligibility for the Program, and to begin to understand the landowner's conservation objectives and the parcel's environmental values. (See the Draft Application Form in Appendix E.) Landowners may decide whether they prefer to donate the easement to the Program, or apply to have the easement purchased through the Program. Landowners may also indicate who they wish to hold the easement. Organizations which are eligible to hold easements donated to the Program include the USDA Forest Service, certain State and local agencies, and nonprofit land trusts. The Forest Service must hold any easement purchased through the Program with national Forest Legacy funds.

CDF will review the applications on a quarterly basis to prioritize and select landowners for participation in the Program. CDF will consult with the SFSCC and Forest Service throughout this selection process to facilitate efficient review and approval of parcel recommendations. The selection process will yield a list of landowner applications which are prioritized for inclusion in the Program. The specific steps in this process are:

1. CDF accepts and screens applications based on the Program's parcel eligibility criteria, which are discussed below;
2. CDF then prioritizes eligible parcels for inclusion in the Program based upon the Program's general conservation goals and objectives, which are also discussed below, as well as FLA-specific conservation objectives discussed in Sections VII to

XI. CDF will consult with local, State, and Federal resource managers, forest and fisheries ecologists, and other appropriate experts when evaluating the relative merits of the applicant parcels. In prioritizing parcels for inclusion in the Program, the relative importance of each parcel's forest resources should be evaluated in the context of that parcel's ecoregion. CDF may also request additional information from applicants during this stage;

3. CDF then recommends the selected parcels for inclusion in the Program to the SFSCC and to CDF's Director, who subsequently review and approve CDF's recommendations;
4. The recommended parcels are then submitted to the USDA Forest Service's Regional Office, with the Forest Service making a final determination as to which conservation easements or other interests in lands will be acquired with Federal funds, or in the case of donations, will be approved for inclusion in the Program under the cost-share agreements. The Forest Service will take into consideration Federal priorities for Forest Legacy, including the degree of non-Federal cost-share available for a particular acquisition.

After this prioritization and approval process has been completed, the process of establishing conservation easements on the approved parcels can proceed along either of two possible routes, depending upon the landowner's preferences and the availability of Federal funding for the Program. The first route is based upon Federal acquisition of conservation easements from willing landowners by the USDA Forest Service. Easements may either be purchased by the Forest Service or conveyed as a charitable donation to the Forest Service. The second route is based upon the donation of conservation easements which conform with the goals and other requirements of the Program to cooperating local or regional nonprofit land trusts, or other entities which are eligible to hold conservation easements, such as qualified State or local government agencies. The Program will encourage the use of both routes to promote landowner participation and use the Program's Federal funding most efficiently.

The specific terms of each conservation easement will be negotiated between the landowner and the easement holder, whether it be the USDA Forest Service, a nonprofit land trust, or some other eligible grantee. These terms will be site specific and will provide for the permanent protection of the forest resources which have been targeted by the landowner for protection on that parcel. All easement acquisitions conducted by the USDA Forest Service for the Program will follow established procedures and standards for negotiation, appraisal, title review and other requirements.

In cases where the conservation easement will be held by the Forest Service, the landowners are encourage to utilize standard stipulations which are being developed by the Forest Service. These standard stipulations are pre-authorized easement terms which can be used to the extent they are applicable to the specific resources being

protected through each easement. Easements which incorporate these standard stipulations will not require additional authorization by the Forest Service's legal counsel, and can therefore be processed more quickly. The Forest Service's draft standard stipulations are included in Appendix F for illustration only.

The value of each conservation easement will be determined by its appraised fair market value, whether it be acquired through Federal funds or other public monies, or through charitable donation. The appraisal will take into consideration the parcel's value before and after its encumbrance by the easement. Landowners should be prudent in hiring and instructing their appraisers. The Program will encourage donations of conservation easements since forestland owners can realize significant financial value through the charitable tax benefits available for both income and estate taxes, and because this will use the program's resources most efficiently.

Parcel Eligibility Criteria

The Program's parcel eligibility criteria reflect the USDA Forest Service *Guidelines* for Forest Legacy, the SFSCC's objectives for the Program, and the need to focus the Program's resources on situations where conservation easements will be an appropriate and efficient conservation tool. To be eligible for participation in the Program, private forestland parcels must:

- Be located at least partially within one of the Program's Forest Legacy Areas (FLAs);
- Be owned by landowners who are willing and interested in selling or donating conservation easements, reserved interest deeds, or fee title through the Program;
- Be forested with at least 10% canopy cover by conifer and/or hardwood species, or be capable of being so forested under natural conditions;
- Have one or more environmental values of greatest concern to the public and the State: important fish and wildlife habitat, including areas which can help maintain habitat connectivity across landscapes; rare plants; biodiversity; riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across California; and lands which directly affect water quality and other watershed values;
- Provide for a continuity of one or more traditional forest uses, such as commodities production and/or habitat maintenance (traditional forest uses are defined in Appendix B); and
- Have environmental values which can be protected and managed effectively through conservation easements at reasonable costs.

Inholdings within the boundaries of Federal lands or incorporated areas are not eligible for acquisition through the Program, due to the existence of other programs which address such areas.

In judging whether a parcel has environmental values which can be protected and managed efficiently through conservation easements, CDF, the SFSCC, and the Forest Service should consider:

- The nature of the environmental values proposed for protection, and whether they can be monitored efficiently and effectively;
- Whether the parcels are likely to become isolated from other areas maintained for key forest resources by development on adjacent parcels;
- Whether the landowners' management goals for their parcels are compatible with the resource protections they are proposing;
- Whether a land trust, public agency, or other suitable organization has expressed an interest in working with CDF and the landowner to establish, hold, and monitor the easements; and
- Whether other sources of funding for parcel acquisition, easement closing, monitoring, and other costs are available.

The Program's Conservation Goals and Objectives

CDF, the SFSCC, and the Forest Service will use the Program's conservation goals and their associated objectives to determine which eligible applicant parcels will receive priority for participation in the Program. The conservation goals and objectives will also provide guidance to participating landowners, CDF, the Forest Service, and easement holders by providing basic direction in easement design and resource management. It should be noted that landowners may still protect other traditional forest uses and forest resources through the Program if they so desire.

The Program's conservation goals focus on protecting those forest resource values which landowners and other members of California's public indicated are of greatest concern. In particular, the public has expressed concern that the Program not direct its resources to the protection of commercial timberland *per se*, but focus instead on the non-timber forest resources that are perceived to be most threatened.

The Program's conservation goals are the following:

- Prevent future conversions of forestland and forest resources;
- Protect wildlife habitat, rare plants, and biodiversity;
- Maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions;

- Protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity;
- Protect water quality, fisheries, and water supplies; and
- Maintain and restore natural ecosystem functions.

The following conservation objectives have been identified in order to help implement the Program's conservation goals:

In order to prevent future conversions of the parcel and its forest resources, priority will be given to:

- Parcels held by owners who will preclude parcel divisions and non-forest development projects on parcels included in the Program. Appropriate exemptions may be negotiated for maintaining compatible development.[xxxiv]

In order to protect wildlife habitat, rare plants, and biodiversity, priority will be given to:

- Parcels which encompass rare natural communities; rare and endemic plants; and habitat for wildlife species of concern, including species which are considered sensitive, threatened, or endangered, species which function as ecological "umbrellas," and species which are considered ecological "keystones." (Umbrella and keystone species are defined in Appendix B.)
- Parcels held by owners who will identify and protect areas with species or communities of concern, and seek to manage for key habitats, including by minimizing fragmentation of forest habitats and maximizing interior forest habitats where appropriate.

In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions, priority will be given to:

- Parcels which are located within areas given priority within scientifically based regional ecosystem management or biodiversity conservation plans.[xxxv]
- Parcels located adjacent to public lands managed for wildlife habitat, in cases where conservation plans have not been developed for the region.
- Parcels held by landowners who will identify areas which currently provide habitat connectivity and corridors for wildlife movement on local and regional scales, or which could be managed to do so, such as riparian areas, ridgelines, and areas which connect different environmental gradients.[xxxvi]
- Parcels held by landowners who will maintain and / or restore forest cover and

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xxxiv Types of development that should be precluded include transmission and utility corridors which fragment forest habitats and provide vectors for exotic species.

xxxv Appropriate ecosystem management and conservation plans need to focus on biodiversity conservation and restoration, such as by establishing core habitat areas, multiple use buffer zones, and connectivity corridors and / or dispersal habitats based upon the needs of keystone species, umbrella species, sensitive species, and indicator species. Private lands are usually located within buffer zones or connectivity areas designated for multiple use.

xxxvi Maintaining connectivity across gradients is important because some species require access to different elevations and habitat types during different seasons.

structure to provide habitat connectivity for the range of wildlife species which would normally populate the area, and who will prevent conversions and development projects in such areas.[xxxvii]

In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity, priority will be given to:

- Parcels which encompass riparian habitats, or which encompass or contribute to relatively large blocks of interconnected oak woodlands.
- Parcels which encompass significant stands of forest species and seral stages which are poorly represented across landscapes and regions, such as Engelman and valley oaks, and stands of ecological old growth and later seral stage forest.
- Parcels owned by landowners who will identify and protect sensitive riparian habitats, including stream banks and vernal pools.
- Parcels owned by landowners who will encourage regeneration of healthy stands of oak species in areas where they are naturally occurring, and of native tree species in riparian areas.

In order to protect water quality, fisheries, and water supplies, priority will be given to:

- Parcels on which land management directly affects streams and other waterways that support salmonids and other key aquatic species.
- Parcels owned by landowners who will identify and seek to minimize past and potential sources of non-point source pollution, including sedimentation, which have negative impacts on fisheries, other aquatic species, and water supplies.

In order to maintain and restore natural ecosystem functions, priority will be given to:

- Parcels which include healthy forests, including those with a natural species mix and a genetically-sound mix of trees within the species represented on the parcel.
- Parcels owned by landowners who will manage the parcel or key portions of it to restore a natural mix of forest species, structure, and seral stages across the landscape.
- Parcels owned by landowners who will identify and protect keystone species and their habitats.
- Parcels owned by landowners who will utilize prescribed burns or other practices to allow more natural fire regimes, where appropriate.

In prioritizing parcels for inclusion in the Program, the relative importance of each parcel's forest resources should be evaluated in the context of that parcel's ecoregion.

[xxxvii] Where possible, roading and fence-building should also be minimized and located to reduce impacts on wildlife movement.

Other factors which CDF, the SFSCC, and the Forest Service may wish to consider in selecting applicant parcels include the land's potential to provide key forest resource values if restoration work is undertaken, and whether the Program's resources can be used most efficiently by focusing on larger parcels.

Because of the diversity of California's forest resources, as well as differences in each landowners' own objectives, not all of these goals will be met in all cases. On the other hand, landowners may also protect other forest resources and traditional forest uses through the Program if they wish to do so. In ranking applicant parcels, CDF, the SFSCC, and the Forest Service will put a priority on those parcels whose landowners seek to accomplish the Program's conservation goals and objectives. Applications which propose to protect other resources and traditional uses, such as public recreation, cultural resources, or scenic enjoyment, may also receive priority if the landowners seek to accomplish a sufficient number of the Program's conservation goals as well.

Additional FLA-specific conservation objectives are discussed in the sections describing each FLA. Site-specific objectives consistent with the Program goals may also be identified by landowners and CDF during the process of designing individual easements and resource management plans.

Landowners and Resource Management

CDF and the easement holders are responsible for working cooperatively with participating landowners to design their easements. However, it is expected that participating landowners will retain all responsibility for managing the forest resources on their parcel(s), subject to any relevant restrictions established in their conservation easements.[xxxviii]

The *Cooperative Forestry Assistance Act of 1990* and the Forest Service *Guidelines for Forest Legacy* also require that landowners participating in California's Program prepare a forest management plan for each easement acquired through the Program. The forest management plans created by the landowners will evaluate the natural resources of the parcel, clarify how they will manage their lands while ensuring the protection of the resources identified in their respective easements, and establish specific forest management objectives and strategies. Management plans must be completed before the conservation easement is finalized.

[xxxviii] Exceptions are possible for those landowners who may wish to sell or donate a reserved interest deed or fee title to the Forest Service, in which case the landowner could transfer management responsibilities. However, such transfers are not a focus of the Program, and are expected to be rare.

NIPF owners may develop their management plans through California's Forest Stewardship Program using the services of a professional resource specialist. The Stewardship Program was created by the *Cooperative Forestry Assistance Act of 1990,* and is managed in California by CDF. NIPF owners may also be eligible for financial assistance through the Stewardship Incentives Program, as well as other Forestry Assistance programs managed by CDF, to help develop their management plans. Industrial owners, which are ineligible for the Forest Stewardship Program, are required to develop a multi-resource management plan.

Easement Monitoring

Each conservation easement established through the Program will require periodic monitoring to verify that the easement's terms are being upheld. Monitoring of individual easements is an important part of the Program's overall process for ensuring that the forest resources which have been protected through the Program are actually being managed in accordance with the terms of the easements. Baseline resource descriptions developed as part of each conservation easement will be used as appropriate to assess changes in resource conditions over time, including any desired changes, such as improvements in riparian habitats or age distributions of tree species.

Generally, easement monitoring will involve periodic visits to the parcel by the easement holder or some third party agreed upon by the landowner and easement holder. However, specific monitoring protocol for each easement will be defined during the process of establishing that easement. Responsibilities for monitoring and enforcing individual conservation easements will be determined in large part by the landowner's selection of the easement holder and the easement. Each conservation easement will have its own MOU in which the landowner and easement holder agree to the assignment of the monitoring and enforcement responsibilities to specific entities. The primary options for assignment of easement monitoring and enforcement responsibilities are as follows:

For conservation easements purchased with Federal funds, monitoring and enforcement responsibilities will be retained by the Forest Service, which will be the easement holder. Pursuant to the umbrella MOU discussed below, the Forest Service may delegate or assign its monitoring and enforcement responsibilities to other participating Federal, State or local government entities. While "day to day" monitoring duties may be further delegated to third parties, including land trusts and other qualified nonprofit organizations, ultimate responsibility for monitoring easements remains with the entities which have responsibility for enforcing them.

For conservation easements donated to land trusts, State agencies, or other non-Federal easement holders, monitoring and enforcement responsibilities will be retained by the

respective easement holder, unless the easement is transferred to the Forest Service pursuant to the easement's MOU. As with easements held by the Federal government, certain monitoring duties for easements which are donated to land trusts, the State, and other partners may also be assigned to other qualified organizations, such as local RCDs and CDF.

In all cases, monitoring must be conducted by individuals and/or organizations which are clearly qualified to assess the condition of the resources being protected pursuant to a given conservation easement.

Program Management and Funding

A statewide plan detailing how California's Program will be managed will be included in the Program's umbrella MOU. This MOU will help coordinate the activities and clarify the responsibilities of the various parties involved in the operation of California's Program, including the USDA Forest Service, CDF, and local partners for each FLA.

The *Cooperative Forestry Assistance Act of 1990* and the Forest Service *Guidelines* establish a cost-sharing process for state Forest Legacy programs. The maximum Federal contribution for total Program costs cannot exceed 75 percent, and is subject to Federal budgetary constraints. Program costs which may be covered by the Federal cost share include the purchase of conservation easements or other interests in land by the Forest Service, as well as related project expenses for easements which are donated to the Forest Service or other easement holders, including activities such as inventories, mapping, other baseline resource descriptions, title research, initial appraisal work, and drafting/discussion of easement terms. The costs of establishing and monitoring Forest Legacy easements can be cost-shared for up to five years for each easement project.

The remaining 25 percent of Program costs must be paid for by matching funds or in-kind contributions from State, local and nongovernmental sources. In addition to contributions of goods and services, the properly documented value of conservation easements accepted for donation to the Program can be a major part of the non-Federal match.

The State will seek to maximize the effectiveness of the Program's limited funding by utilizing it primarily to fund project costs associated with charitable donations of conservation easements. The State will also encourage the use of "bargain sales" by willing landowners. A bargain sale is an agreement wherein the landowner receives payment for a portion of the fair market value of the rights which are conveyed through

conservation easements or other interests in land, and makes a charitable donation of the remainder of that value.

Responsibilities for subsequent monitoring and enforcement costs, as well as other cost sharing and funding arrangements, will be defined in the umbrella MOU and the individual MOU for each easement. Funding options for on-going monitoring and enforcement costs include charitable donations by landowners, non-profit organizations, or other sources; contributions from participating landowners that are derived from forest management activities on the parcel protected under the conservation easement; and public appropriations for this purpose at the state or local level.

VI. SELECTION PROCESS FOR FOREST LEGACY AREAS

Function of Forest Legacy Areas

The AON identifies specific geographic areas known as Forest Legacy Areas (FLAs) in order to prioritize forestlands for voluntary protection through the Program. Forestland parcels within the Program's FLAs will be eligible for protection through the Program, with the exception of any parcels located wholly within the boundaries of incorporated areas or the Congressional boundaries of Federal lands. Only owners of forested parcels within these FLAs may apply to the Program. The Program's application process, landowner eligibility criteria, and landowner selection process are described in Section V. Because participation in the Program is strictly voluntary, and because identification of the Program's FLAs was based upon existing public information, the designation of these FLAs will not impose any new regulatory burdens or obligations upon landowners located within them.

Selection of Initial Project Areas

The SFSCC's conservation goals were the basis upon which CDF staff and the Task Force selected the Program's initial project areas, including those which were proposed for FLA designation in the first draft AON. (These goals are discussed in Section V.) This selection process identified project areas which represented the state's extremely diverse forest types and forest resources, which were prioritized at a statewide level, and which were subsequently refined through public comment and other local input.

CDF staff and the Task Force first identified project areas containing privately owned conifer and hardwood forestlands that are experiencing population and development pressures.[xxxix] To provide an efficient unit of analysis, these threatened forestlands were identified by hydrological subareas (watersheds). Two indicators for population and development pressure were used: existing housing density and areas which had been identified by CDF as presenting severe fire hazard potential for residences. (Appendix C, Table V, discusses these indicators in more detail.) Forested subareas which contained both development pressure indicators were selected for further analysis, yielding forty-four project areas. These project areas are shown in Appendix C, Figure XI.

[xxxix] The SFSCC defined forestland as land that can support 10% native tree cover, under natural conditions, and can be managed for resources including timber, aesthetics, fish and wildlife, biodiversity, water, recreation, and other public benefits.

These forty-four project areas were then ranked against each other, based upon six indicators of how their significant environmental values reflected the Program's conservation goals, and the likelihood that past management practices inadequately protected water quality and other key resources:

- The number of rare plants, animals, and natural communities listed in the State's Natural Diversity Data Base (NDDB) provided an indicator of habitat quality and a measure of biodiversity.
- The number of significant natural areas provided measures of habitat quality and biodiversity which are not covered by the NDDB. Significant natural areas contain particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity.
- The number of streams which provide suitable habitat for coho salmon, indicated areas with high water quality and fisheries habitat (coho salmon are particularly sensitive to water quality changes).
- The number of impaired waterways indicated existing water quality and watershed threats. Impaired waterways are designated by the State Water Resources Control Board and the U.S. Environmental Protection Agency pursuant to the *Clean Water Act* as watercourses which are experiencing point and/or nonpoint source pollution which technology based controls are unable to reduce to levels necessary to meet applicable water quality standards.
- The number of sub-basins with highly erodible soils indicated the likelihood that development activities will cause landslides, debris slides, and surface erosion, impacting both soil quality and watershed functions.
- The acreage of public and private lands which are managed for wildlife habitat and other public values, including public recreation and scenic resources, indicated the potential for forestlands in the project area to lie adjacent to lands where habitat connectivity is needed, where access to public recreation may be valued, or where scenic impacts are likely to be felt.

Appendix C, Figures V through X, show the distribution of these indicators across California, and Appendix C, Table V, lists their data sources.

The thirty-three highest-ranking project areas were then selected for further consideration and were presented to the public as the Program's proposed FLAs during the review process for the first draft AON. As shown in Appendix C, Figure XII, these areas were located on the west slope of the Sierra Nevada; along the north- and north-central coast; in scattered locations in southwestern California, including the San Gabriel Mountains, San Jacinto Mountains, and southern central coast; and in scattered locations in the Klamath and Cascade Mountains.

Selection of Forest Legacy Areas

As with previous public input on the Program, a number of comments on the first draft AON from local governments, landowners, conservation groups, and other members of the public proposed additional project areas and resources for protection through the Program. Appendix D lists these additional areas. Some comments also provided information on areas which are already developed, or are otherwise considered lower priority. These suggestions were augmented by information provided by CDF foresters.

After considering these public comments, CDF staff and members of the Task Force selected revised FLAs from the thirty-three project areas identified by the first draft AON, and from the additional areas identified by the public and CDF staff. Seven factors were considered during this selection process:

- The need to focus the Program on a manageable number of FLAs during its first few years;
- The importance of protecting a diversity of forest types through the Program;
- The level of landowner interest in each project area;
- The level of public support for each project area;
- Whether a local government or nonprofit organization is interested in helping to implement the Program in that area;
- The relative amount of forestland in the project area which is zoned TPZ; and,
- The degree of population growth and conversion pressure in the area.

This selection process yielded fourteen FLAs which were located in Sonoma, San Mateo, Santa Cruz, Riverside, and San Diego counties. Project areas in the Sierra Nevada and the Klamath-Cascade regions were dropped due to a relative lack of public support during the review period for the first draft AON. These FLAs were presented to the public in the second draft AON.

In reviewing the second draft AON, CDF staff and members of the Task Force selected three additional FLAs in Mendocino and San Diego Counties. In Mendocino County, a new county-wide FLA was identified at the request of the Mendocino County Board of Supervisors, landowners, and other members of the public who have found that development pressures are significant in both commercial and noncommercial forestlands. These parties expressed strong interest in working with the Program to protect and restore the county's timberlands, watersheds, fisheries, and other forest-related resources. CDF staff and members of the Task Force determined that the significance of these threats and the level of public support were sufficient to warrant making the Program available to landowners in this county.

In San Diego County, two additional areas, De Luz and Boden Canyon, were originally proposed for inclusion in the second draft AON and met the criteria used by CDF staff and the Task Force in selecting the other San Diego FLAs; however, final maps for these areas could not be produced in time for that draft. These two areas were identified by the San Diego Association of Governments (SANDAG) as having key forest resources, high levels of biodiversity, and important wildlife corridors. Landowners within these areas are also likely to be interested in working with the Program. The Boden Canyon FLA was subsequently combined with the neighboring Rancho Guejito FLA to simplify administration of the Program.

The third draft AON was intended primarily for editorial review by the State, the Forest Service, and local program partners; no changes were made to the Program's FLAs on the basis of public comments on the third draft. Public comments on the third draft which pertained to the FLAs were limited to requests that the Program's FLAs include highly threatened forestlands in the Sierra Nevada, as well as some riparian sites in Los Angeles County.

Map I shows the location of the Program's sixteen FLAs. Sections VII through XI describe each of the FLAs in detail.

Areas Which Were Proposed But Not Included

In addition to those located in the Program's FLAs, a number of forested areas across the state are likely to contain environmentally-important forest resources which are threatened by non-forest development, parcelization, or historical management practices which inadequately protected the resources. These areas include the initial project areas which were not included in one of the Program's FLAs.

Public comments on the first and second draft AON also identified several areas throughout the state where forestlands are believed to be eligible for the Program. These areas are listed in Appendix D. A number of comments, including comments from one local government, also expressed concern that the Program does not provide opportunities to protect oak woodlands and other forestlands in the Sierra Nevada region, where development pressures are substantial. Appendix C discusses the distribution of public support for the Program among local governments and other publics.

In reviewing comments on the second draft AON, CDF staff and members of the Task Force agreed that other areas should continue to be excluded at this time, based on the need to focus the Program on a manageable number of FLAs, and to focus on areas where public support is strongest. However, as noted below, the AON may be amended to include additional FLAs should this be desired in the future.

AON Amendment Process -- Possible Inclusion of Additional FLAs

The Task Force, CDF staff, and the Forest Service have found that the State and the Forest Service may wish to consider making the Program available to landowners in other areas once the Program has become established and has developed a successful track record. This is facilitated by the USDA Forest Service *Guidelines for Forest Legacy* which permit the State to amend California's AON to incorporate additional FLAs if so desired. While it is anticipated that the amendment process might be

Map I.

FOREST LEGACY AREAS
OF THE CALIFORNIA FOREST LEGACY PROGRAM

initiated by forest landowners, local governments, or other organizations within the area(s) in question, the State is responsible for developing an amendment and forwarding it to the Forest Service for approval.

In order to qualify as an additional FLA, a forestland area must meet three basic criteria. First, the area must encompass environmentally important forest resources which are threatened by non-forest development, by parcelization, or by past management practices which inadequately protected forest resources. In particular, the area should include forest resources which are of concern to the Program's general conservation goals, which are listed in Section V. Documentation of forest resources and threats should be commensurate with the documentation provided for other FLAs within the AON. Where possible, proposals to include an additional FLA within the Program should include proposed FLA-specific conservation objectives, maps showing proposed FLA boundaries, and other information to facilitate review of the proposal and possible development of an amendment.

Second, local publics must support the proposal to designate the area as a FLA. The level of public support should be commensurate with levels that have been found for the other FLAs which have been developed and accepted through this AON. To assess and document the level of public support, a public participation process for the proposed area will be conducted, thereby ensuring that concerned publics are aware of the proposal and have had reasonable opportunities to comment upon it.

Finally, the designation of the area as a FLA must be compatible with local policies, including the county's general plan and other policies adopted by the county planning department and/or board of supervisors.

VII. THE MENDOCINO FOREST LEGACY AREA

FLA Location

Map II depicts the location of the Mendocino FLA and its boundaries. The FLA is located in Mendocino County, which lies in the Northwest bioregion of California. (Jones & Stokes, 1992) Mendocino County is predominately forestland, and the FLA has been defined to provide landowners throughout the county with opportunities to protect forest resources in conifer, hardwood, and riparian forest types. Sixteen watersheds are located in Mendocino County, including the upper reaches of the Eel, South Fork Eel, Middle Fork Eel, and Russian Rivers.

Boundary Description

Because of the importance of forest resources to Mendocino County's economy and environment, and the prevalence of threats to these resources across the county, the Mendocino County Board of Supervisors requested that the FLA be defined as those lands which are zoned Forest Land, Range Land, Agricultural Land, and Remote Resource Land under the Mendocino County General Plan as of August, 1995. Private forestland owners within any of these four land use zones will be eligible for voluntary participation in the Program. (Currently, no lands in Mendocino County are zoned as Remote Resource Land.) Map II depicts the areas encompassed by these zones. Appendix I also lists parcels which are zoned Forest Land, Range Land, Agricultural Land, and Remote Resource Land as of August, 1995.

Lands located within the proclamation boundary of the Mendocino National Forest, other public lands, and lands located within incorporated areas are not eligible for participation in the Program, and are therefore excluded from the FLA. The urban boundaries depicted in Map II are based upon data from the U.S. Department of Commerce, Bureau of the Census, which is updated periodically to follow official city boundaries; in cases where the official city boundaries are different than Map II, the official city boundaries will comprise the FLA boundary.

As noted in Appendix J, official maps depicting the FLA at a larger scale are available for viewing at CDF.

Forest Resources and Threats

The majority of the land included in the Mendocino FLA is normally covered by six conifer and hardwood forest types. The most predominant type, redwood forest,

covers most of the coastal half of the county, while mixed evergreen forest covers most of the northern portion of inland Mendocino County. Mixed hardwood forest is common in the inland areas, and blue oak / gray pine forest.

Map II.

MENDOCINO FOREST LEGACY AREA

dominates the southern inland portion, while Coast Range montane forest covers the easterly portion of the northern interior. In addition, coastal cypress and pine forest can be found along much of the coastline, while a minor amount of mixed evergreen forest with chinquapin is found along the northern border with Humboldt County. (Kuchler, 1977) A more comprehensive list of the forest vegetation found in the FLA is provided in Appendix H, Table I.

As of 1989, there were 1,315,000 acres of commercial timberlands in Mendocino County, 81% of which were privately owned. (FRRAP, 1989) These private timberlands include roughly 175,000 acres of Douglas fir forest, 267,000 acres of redwood, 5,000 acres of true fir, 9,000 acres of ponderosa pine, 19,000 acres of Bishop pine, 5,000 acres of lodgepole pine, 5,000 acres of incense cedar, 9,000 acres of red alder, 41,000 acres of California black oak, 49,000 acres of Oregon white oak, 84,000 acres of Pacific madrone, 342,000 acres of tanoak, and 70,000 acres of other hardwoods. (Mendocino County, 1990) According to a survey which focused strictly on oaks, the county encompasses 1,000 acres of blue oak forest, 104,000 acres of coast live oak forest, 105,000 acres of interior/canyon live oak forest, and 164,000 acres montane hardwood mix. Overall, 91% of these oak woodlands are privately owned. (FRRAP, 1993) The county's private forestlands produced 235 million BF of timber in 1993. (TTD, 1994a)

The Mendocino FLA encompasses a number of major watersheds and waterways, most of which provide habitat for steelhead and other anadromous fish. Mendocino County encompasses over 2 million meters of waterways which currently provide suitable coho habitat. As shown in Appendix C, Figure VII, this is a large proportion of the state's available coho habitat; the names of these waterways are listed in Appendix H, Table VII. Chinook, coho, and steelhead runs in the Eel, Russian, Ten Mile, Noyo, Big, Navarro, and Garcia Rivers have historically totaled 345,000 fish, bringing in 111,000 angler-days worth of recreation and recreation-related expenditures to the county. (Mendocino County, 1990) The overall value to the county from the commercial salmon fishery and processing industry was estimated to be $15,600,000 in 1976; the Noyo Harbor fleet alone caught $5,483,000 worth of salmon in 1979. (Mendocino County, 1990)

Historically, little treatment of instream drinking water supplies has been required in the county, in part because riparian forest species, including cottonwood, willow, alder, bay, and big leaf maple, help maintain water quality by maintaining the stability and filtration functions of the soil. (Mendocino County, 1990) Many of the county's rivers and streams are still considered to have high water quality, based on the coho salmon habitat they provide. Two reservoirs on the upper Eel and east fork Russian River also provide an important source of water.

Mendocino County has also been a state leader in private hunting clubs and deer hunting. (Mendocino County, 1990) Other game and furbearing species found in the

county include blue grouse, California quail, band tailed pigeon, mourning dove, western gray squirrel, Douglas squirrel, chickaree, brush rabbit, mink, badger, weasel, raccoon, muskrat, ringtailed cat, gray fox, bobcat, marten, otter, and kingfisher. Non-native wild turkey and feral pigs can also be found in the county's forestlands. Roughly 157,000 hunter days are spent annually in the county. (Mendocino County, 1990) Other forest and forest-related wildlife species which are found in the county include Roosevelt elk, mountain lion, black bear, osprey, and pileated woodpecker. Twenty-one species of waterfowl and forty-three species of fish also inhabit the county's waterways. (Mendocino County, 1990)

The Mendocino FLA provides habitat for 35 rare plants, animals, and natural communities which are listed in the State's Natural Diversity Data Base, including Mendocino Coast Indian Paintbrush, Northern Goshawk, and Valley Oak Woodland. (See Appendix H, Table III, for species found in the FLA.) At least thirty-two significant natural areas, which are particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity, have also been identified in the FLA. (See Appendix H, Table IV.) These areas encompass a total of 40, 419 acres. (DFG, 1994b)

The most frequently recognized threats to private forestlands and forest resources in the Mendocino FLA which the Program is expected to help alleviate are continued subdivision of forestland parcels into smaller, less economically-efficient units; continued encroachment of roads, housing and other non-forest development into forestlands, resulting in removal of lands from the resource base, as well as impacts to forest ecosystems; and continued impacts to water quality, fisheries, and forest productivity stemming from past forest management activities, including poor road design, intensive logging practices, and overgrazing. (Mendocino County, 1990; Mendocino Bd. Supervisors, 1995)

Housing densities have reached one house per 40 acres to one per 160 in much of the FLA's conifer and hardwood forestlands, particularly along Highway 101, Highway 128, and Highway 1, where the threat of catastrophic fires is also considered to be significant. (See Appendix C, Figure IV.) Non-forest development is likely to continue in much of the county's forestlands. The state predicts that Mendocino County's population will increase by 25 to 40% from 1990 to 2005. (Finance, 1990) Between 1970 and 1990, the population in unincorporated Mendocino County grew by an average of 3.2% per year, versus 2.3% per year in the incorporated areas. In-migration has accounted for roughly 55 to 83% of the county's population growth in different years during this period; from 1993 to 1994, in-migration accounted for roughly 78% of the growth. (Farr, 1995)

The potential for continued parcelization and development of Mendocino County forestlands is also exacerbated by existing and potential Certificates of Compliance

(CCs). Between 1988 and 1990, CCs were issued for historical parcel subdivisions on more than 99,000 acres of resource lands in TPZ and Agricultural Preserve zones, of which at least 60,000 acres were commercial timberland, including at least 42,000 acres of IPF forestland which were depleted of timber stocks. (Mendocino Bd. of Supervisors, 1990; Gundling, *et al*, 1991) Forty-four percent of the commercial timberlands in Mendocino County are owned by non-industrial forestland owners (NIPFs), who are generally more susceptible to development pressures. (FRRAP, 1989) As of 1979, one fourth of the county's timberlands were also outside of TPZ zones. (Mendocino County, 1990)

The decline of anadromous fisheries in Mendocino County has generally followed the statewide pattern discussed in Section III of the AON. Over 1.5 million acres of land are within basins whose soils are highly erodible, and over 1.6 million acres are in basins which are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (CDC, 1994b; SWRCB, 1994) Additional development in these areas has the potential to further impact soils and water quality. Increased development will also place additional demands on the county's limited instream water supplies, which are needed for fisheries, irrigation, and domestic use. (Mendocino County, 1990) Invasive exotic brush species which can impede regeneration of native vegetation are also a problem in some parts of the county; these include gorse, pampas grass, and scotch broom. Star thistle, medusa head, and Klamath weed are also a problem in rangelands. (Mendocino County, 1990)

FLA Implementation

FLA-Specific Conservation Objectives for the Mendocino FLA:

CDF, the SFSCC, and the Forest Service will use the Program's conservation goals and objectives to determine which eligible applicant parcels will receive priority for participation in the Program. (The Program's conservation goals and objectives are discussed in Section V.) In addition, the conservation goals and objectives will provide guidance to CDF and to landowners who wish to participate in the Program by providing basic direction in easement design and resource management.

All of the Program's conservation goals are applicable to the Mendocino FLA. As discussed in Section V, these goals translate into a number of conservation objectives. The following conservation objectives are particularly applicable to the Mendocino FLA:

- *In order to prevent future conversions of forestland and forest resources;, and to maintain and restore natural ecosystem functions:*

Minimize parcel fragmentation and non-forest development to maintain the resource base for forest-related economies, to reduce impacts to forest ecosystems, to reduce the risk of catastrophic fires to forest resources, and to maintain opportunities for the appropriate use of fire in forest management.

- *In order to protect wildlife habitat, rare plants, and biodiversity:*
  Protect rare plants, habitat for rare animals, natural communities, and significant natural areas, including those listed in Appendix H, Tables III and IV.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values, particularly along ridgetops, streams, and other areas utilized by wildlife as migration "corridors." (See Appendix H, Table V, for a list of public lands in the FLA.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Maintain and restore the natural mix of native forest tree species and age classes, especially oak woodlands, stands of later seral stage redwood and Douglas fir types, and ecological old growth.

- *In order to protect water quality, fisheries, and water supplies:*

  Protect and restore habitat for coho and other salmonids, especially riparian areas, watercourse structures, instream flows, and related characteristics, including along the waterways listed in Appendix H, Table VII.

  Minimize actual and potential erosion, sedimentation, and other impacts to water quality, especially impacts caused by existing roads and other past management activities.

Naturally, landowners may also protect other traditional forest uses and forest resources through the Program if they so desire. In ranking applicant parcels, CDF, the SFSCC, and the Forest Service will put a priority on those parcels whose landowners seek to accomplish the Program's conservation goals and objectives. Applications which propose to protect other resources and traditional uses, such as public recreation, cultural resources, or scenic enjoyment, may also receive priority if the landowners seek to accomplish a sufficient number of the Program's conservation goals as well.

Public Benefits Derived From Establishing the FLA:

Establishing the Mendocino FLA will facilitate and encourage voluntary efforts by private forestland owners to protect and / or restore the forest landbase, forest health and ecosystem function, water quality and other watershed values, biodiversity, fish and wildlife habitat, listed and sensitive species habitat, and long-term timber supply for the benefit of current and future generations. In some cases, landowners may also choose to benefit the public by protecting other forest resources and traditional uses defined by the SFSCC such as public recreation, cultural resources, or scenic enjoyment.

Resource Protection Mechanisms for the Mendocino FLA:

Conservation easements purchased by the USDA Forest Service, or donated to the Forest Service, to other eligible government agencies, or to eligible land trusts, will be the Program's tool of preference for protecting environmental values and for establishing site-specific conservation and management objectives in cooperation with willing landowners. The Program's approach to using conservation easements is discussed further in Section V.

Local Support for the Mendocino FLA:

The following local governments, organizations, and businesses have expressed their support for the Program: County of Mendocino, Board of Supervisors, by resolution; University of California, Cooperative Extension, Mendocino County; Redwood Coast Land Conservancy; Comptche Land Conservancy; the North Coast Center for Biodiversity & Sustainability; Environmental Protection & Information Center; and Bob Whitney consulting.

Other local organizations which have compatible goals and policies include: Anderson Valley Land Trust, County of Mendocino, Planning & Building Services Dept.; Mendocino Land Trust; Mendocino Forest Conservation Trust; and the Pacific Forest Trust. The Mendocino County General Plan also identifies conservation easements as an appropriate tool for meeting the county's resource conservation and land use objectives. (Mendocino County, 1990)

Government Entities Which Are Eligible To Assume Monitoring Responsibilities For Easements Established Through the Program in the FLA:

In addition to the non-profit land trusts listed above, as well as other qualified governmental and non-governmental organizations, the following Federal, State, and local agencies are eligible to assume responsibility for establishing and monitoring easements in the Mendocino FLA:

- USDA Forest Service
- USDOI Bureau of Land Management
- California Department of Forestry & Fire Protection
- California Department of Fish & Game
- Mendocino County Resource Conservation District
- Mendocino County

VIII. THE SONOMA FOREST LEGACY AREA

FLA Location

Map III depicts the location of the Sonoma FLA and its boundaries. The FLA is located principally in the Northwest bioregion, and encompasses the conifer and hardwood forests of northern Sonoma County. The FLA extends south from Mendocino County to Marin County and San Pablo Bay. The FLA spans the breadth of Sonoma County from the Pacific Ocean to Lake and Napa Counties, encompassing a number of watersheds, including the Gualala, Dry Creek, Big Sulphur Creek, Santa Rosa Creek, and the lower reaches of the Russian River.

Boundary Description

As requested by Sonoma County, the Sonoma FLA is defined as all lands within the County's boundaries with the Pacific Ocean, and with Mendocino, Lake, Napa, Marin, and Solano Counties. As with the other FLAs, any public lands or lands within incorporated areas are ineligible for voluntary participation in the Program. Public lands which are excluded from the Sonoma FLA include those lands listed in Appendix H, Table V. The urban boundaries depicted in Map III are based upon data from the U.S. Department of Commerce, Bureau of the Census; in cases where the official city boundaries are different than Map III, the official city boundaries will comprise the FLA boundary. As discussed below, the FLA also includes some lands which are not likely to meet other Program eligibility requirements, namely the requirement that applicant parcels must be forested with at least 10% canopy cover, or be capable of being so forested under natural conditions.

As noted in Appendix J, official maps depicting the FLA at a larger scale are available for viewing at CDF.

Forest Resources and Threats

Much of the land encompassed by the Sonoma FLA is normally covered by conifer, mixed hardwood-conifer, and hardwood forest types. While the FLA encompasses some areas identified as brushland by the Sonoma County General Plan, these areas normally contain some foothill woodlands. Similarly, the FLA includes areas identified as grassland and agricultural land which may have some residual valley oaks from the area's original oak savannahs. These brushlands, grasslands, and agricultural lands are found principally in the Alexander Valley, along the lower

reaches of Dry Creek, around the urban areas of Healdsburg and Santa Rosa, and in the southern portion of the county. Pockets of oak savannah within the larger

Map III.

SONOMA FOREST LEGACY AREA

coniferous areas also help maintain the area's biodiversity, as do pockets of redwood forests in moister canyons within the otherwise dry interior. (Sonoma County, 1986) The major forest communities of the FLA and their typical plant and animal components are described in Appendix H, Table II. It should be noted that some brushlands and grasslands which would not normally support forest communities are also located in the FLA. These areas are not likely to be eligible for participation in the Program, except where an applicant demonstrates that their protection is integral to protecting key forest resources.

As of 1989, there were 266,000 acres of commercial timberlands in Sonoma County, 72% of which were privately owned. (Sonoma County, 1989) The county's private forestlands produced 35 million BF of timber in 1993. (TTD, 1994a) The county also encompasses 110,000 acres of coast live oak forest, 76,000 acres of interior/canyon live oak forest, and 26,000 acres montane hardwood mix. Overall, 92% of these oak woodlands are privately owned. (FRRAP, 1993)

The Sonoma FLA encompasses a number of major watersheds and waterways, most of which are identified as significant riparian corridors by the Sonoma County General Plan: the Gualala River and its tributaries, Dry Creek and its tributaries, Big Sulphur Creek and its tributaries, Austin Creek and its tributaries, Salmon Creek, Green Valley Creek, Santa Rosa Creek, Sausal Creek, Briggs and Redwood Creeks, Franz Creek, Mark West Creek, and the Russian River and its other tributaries. Salmon, steelhead, and resident trout are all common, using the Russian and Gualala river systems, as well as Salmon Creek as principal migratory routes. (Sonoma County, 1989) Much of the Gualala River, for example, lies in the San Andreas Fault. The broken strata associated with the fault help store water, releasing it during the summer months, helping to maintain summer flows and keeping water temperatures at levels needed for fish habitat. The Gualala River, Russian River, Sheephouse Creek, Salmon Creek, Hulbert Creek, and Dutch Bill Creek are all considered to have high water quality, based on the coho salmon habitat they provide. (CDF, 1994)

Riparian forest types in the Sonoma FLA are likely to harbor osprey, bald eagle, great blue heron, yellow warbler, muskrat, gray fox, coyote, mink, and river otter. Residual riparian woodlands and vernal pools are also likely to be found in grasslands, while freshwater marsh communities occur where soils remain saturated year round, providing habitat for migratory waterfowl, as well as many local flora and fauna. (Sonoma County, 1989) In addition to comprising key fish and wildlife habitat areas, the watersheds of northern Sonoma County are also an important existing and potential supply of domestic water. (Hansen, 1994)

Overall, the Sonoma FLA provides habitat for 63 rare plants, animals, and natural communities which are listed in the State's Natural Diversity Data Base, including northern spotted owl, northwestern pond turtle, and the pale big eared bat. (See

Appendix H, Table III, for species found in the FLA.) Fifty-five significant natural areas, which are particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity, have also been identified in the FLA. (See Appendix H, Table IV.) These areas encompass a total of 90,263 acres.

The most frequently recognized threats to private forestlands and forest resources in the Sonoma FLA are continued encroachment of housing and other non-forest development into forestlands, and continued impacts to water quality, fisheries, and forest productivity stemming from past forest management activities, such as poor road design. Housing densities of one house per 40 acres to one per 160 acres already exist in much of the FLA's conifer and hardwood forestlands, particularly in broad belts along the Highway 101 corridor, in most of the southern half of the FLA, and to a lesser extent along the coast. The threat of catastrophic fires is also considered to be significant in these areas. In addition, 921,165 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994) Likewise, 628,194 acres of land are located in highly erodible watersheds, where additional development is most likely to impact soils and water quality. (CDC, 1994b)

Non-forest development in the FLA's forestlands are likely to continue. Sonoma County's population is projected to increase by 25 to 40% from 1990 to 2005. (Finance, 1990) Certificates of Compliance for existing parcel subdivisions have also been issued on more than 20,000 acres of forestland, principally in the northwestern portion of the FLA, where the market for development of vineyards, housing, and other non-forest uses is generally increasing. (Hansen, 1994) Most of timberlands in Sonoma County are owned by non-industrial forestland owners (NIPFs), who are generally more susceptible to development pressures. (USDA, 1986a) Existing efforts to work cooperatively with private landowners to maintain resource lands through conservation easements, such as those acquired conducted by the Sonoma County Agricultural Preservation & Open Space District, are focused more on maintaining open space buffer zones between urban areas and, to a lesser extent, protecting the lower reaches of major watersheds.

FLA Implementation

FLA-Specific Conservation Objectives for the Sonoma FLA:

CDF, the SFSCC, and the Forest Service will use the Program's conservation goals and objectives to determine which eligible applicant parcels will receive priority for participation in the Program. (The Program's conservation goals and objectives are discussed in Section V.) In addition, the conservation goals and objectives will provide

guidance to CDF and to landowners who wish to participate in the Program by providing basic direction in easement design and resource management.

All of the Program's conservation goals are applicable to the Sonoma FLA. As discussed in Section V, these goals translate into a number of conservation objectives. The following conservation objectives are particularly applicable to the Sonoma FLA:

- *In order to prevent future conversions of forestland and forest resources, and to maintain and restore natural ecosystem functions:*

  Minimize the level of housing and non-forest development to reduce risk of catastrophic fires to forest resources and to maintain opportunities for the appropriate use of fire in forest management.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values. (See Appendix H, Table V, for a list of public lands in the FLA.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Maintain and restore the natural mix of native forest tree species and age classes, especially oak woodlands, stands of later seral stage redwood and Douglas fir types, and ecological old growth.

- *Protect water quality, fisheries, and water supplies:*

  Protect and restore salmon habitat, especially riparian areas, watercourse structures, instream flows, and related characteristics, including along waterways listed in Appendix H, Table VII.

  Minimize actual and potential erosion, sedimentation, and other impacts to water quality, especially impacts caused by existing roads and other past management activities.

Naturally, landowners may also protect other traditional forest uses and forest resources through the Program if they so desire. In ranking applicant parcels, CDF, the SFSCC, and the Forest Service will put a priority on those parcels whose landowners seek to accomplish the Program's conservation goals and objectives. Applications which propose to protect other resources and traditional uses, such as public recreation, cultural resources, or scenic enjoyment, may also receive priority if the landowners seek to accomplish a sufficient number of the Program's conservation goals as well.

Public Benefits Derived From Establishing the FLA:

Establishing the Sonoma FLA will facilitate and encourage voluntary efforts by private forestland owners to protect and/or restore the forest landbase, forest health and ecosystem function, water quality and other watershed values, biodiversity, fish and wildlife habitat, and listed and sensitive species habitat for the benefit of current and future generations. In some cases, landowners may also choose to benefit the public by protecting other forest resources and traditional uses defined by the SPSCC such as public recreation, cultural resources, or scenic enjoyment.

Resource Protection Mechanisms for the Sonoma FLA:

Conservation easements purchased by the USDA Forest Service, or donated to the Forest Service, to other eligible government agencies, or to eligible land trusts, will be the Program's tool of preference for protecting environmental values and for establishing site-specific conservation and management objectives in cooperation with willing landowners. The Program's approach to using conservation easements is discussed further in Section V.

Local Support for the Sonoma FLA:

The following local governments, organizations, and businesses have expressed their support for the Program: County of Sonoma, Board of Supervisors, by resolution; County of Sonoma, Agricultural Preservation & Open Space District; Sonoma Land Trust; Sea Ranch Homeowners Association; Landwrights; California Native Plant Society, Milo Baker Chapter; Gardener's Guild, Inc.; Redwood Coast Land Conservancy; and the North Coast Center for Biodiversity & Sustainability. The citizens of Sonoma County have also expressed their support for programs which utilize conservation easements to protect resource lands by voting to establish and fund the Sonoma County Agricultural Preservation & Open Space District.

Other local organizations which have compatible goals and policies include: County of Sonoma, Permit & Resource Management Dept.; and the Pacific Forest Trust.

Government Entities Which Are Eligible To Assume Monitoring Responsibilities For Easements Established Through the Program in the FLA:

In addition to the non-profit land trusts listed above, as well as other qualified governmental and non-governmental organizations, the following Federal, State, and local agencies are eligible to assume responsibility for establishing and monitoring easements in the Sonoma FLA:

- USDA Forest Service
- USDOI Bureau of Land Management

- California Department of Forestry & Fire Protection
- California Department of Fish & Game
- Resource Conservation Districts: Sotoyoma-Santa Rosa, Gold Ridge, and Southern Sonoma County
- Sonoma County

IX. THE CENTRAL COAST FOREST LEGACY AREA

FLA Location

Maps IV and V depict the location of the Central Coast FLA and its boundaries. The FLA is located in the Central Coast Ranges bioregion, and extends south from the Pacific coast and Montara Mountain in San Mateo County to the Watsonville area in southern Santa Cruz County. The FLA encompasses most of the Santa Cruz Mountains and their westside watersheds in the two counties, including San Gregorio, Pescadero, and Butano Creeks, and the San Lorenzo River. In Santa Cruz County, the FLA extends inland from the Pacific Ocean to Santa Clara County.

Boundary Description

San Mateo County:

In San Mateo County, the Central Coast FLA is defined as the lands lying within the following boundary. From the southern boundary of the city of Shelter Cove, the western boundary of the FLA runs south along the Pacific Ocean to the northern city limit of Half Moon Bay. The FLA boundary then follows the boundary of Half Moon Bay east, north, south, and west, returning to the Pacific Ocean. From Half Moon Bay, the boundary follows the Pacific Ocean south to Santa Cruz County. The FLA boundary then continues south to include the Santa Cruz County portion of the FLA. The eastern boundary of the San Mateo portion of the FLA starts at the intersection of the San Mateo, Santa Cruz, and Santa Clara county lines and proceeds north along the San Mateo / Santa Clara County line to Highway 280. The northern boundary of the FLA then follows Highway 280 northwest to a transmission line corridor approximately 2.5 miles northwest of Woodside Road / Highway 84. The boundary follows the corridor south to the boundary of Huddart County Park. The FLA boundary runs along the northeast, southeast, and southwest boundaries of the Park to Skyline Boulevard / Highway 35. The boundary then follows Skyline Boulevard / Highway 35 northwest to Highway 92, and then follows Highway 92 approximately 1.5 miles west to Pilarcitos Creek. The FLA boundary follows Pilarcitos Creek north to the northern edge of Section 30, T4S / R5W, after skirting the southwestern edge of Pilarcitos Lake. The FLA boundary then follows the northern boundary of Section 30 to the western boundary of Section 19, T4S / R5W. The FLA boundary then follows Section 19 north to the boundary of San Pedro Valley County Park. The FLA boundary then follows the southern and western Park boundaries to the city limits of Shelter Cove / Pedro Valley.

Public lands and lands within any incorporated areas are excluded from the FLA. Public lands which are excluded from the San Mateo portion of the Central Coast FLA include those lands listed in Appendix H, Table V. The urban boundaries

Map IV.

CENTRAL COAST FOREST LEGACY AREA
(SAN MATEO COUNTY)

Map V.

CENTRAL COAST FOREST LEGACY AREA
(SANTA CRUZ COUNTY)

depicted in Map IV are based upon data from the U.S. Department of Commerce, Bureau of the Census; in cases where the actual city boundaries are different than Map III, the official city boundaries will be followed.

Santa Cruz County:

In Santa Cruz County, the Central Coast FLA is defined as all lands lying within Santa Cruz County, with the following exceptions. Public lands, including those listed in Appendix H, Table V, are excluded. Also excluded are incorporated areas and lands lying within the mapped urban services lines or rural services lines identified by the Santa Cruz County Planning Department. These areas include Santa Cruz, Scotts Valley, Paradise Park, Rincon, Felton, Ben Lomond, Boulder Creek, areas along Boulder and Bear Creeks, Twin Lakes, Opal Cliffs, Capitola, Soquel, Aptos, Rio Del Mar, La Selva Beach, Ellicott, Freedom, Watsonville, and areas east of Pinto Lake. Finally, the areas which lie west of the Southern Pacific Railroad and south of the City of Soquel are excluded.

As noted in Appendix J, official maps depicting the FLA at a larger scale are available for viewing at CDF.

Forest Resources and Threats

Most of the landscape within the Central Coast FLA is covered by conifer, mixed conifer-hardwood, and hardwood forest types. The San Mateo County portion of the FLA, for example, includes three vegetation classes identified in the County's General Plan: coniferous forest, mixed evergreen forest, and woodland savanna. Coniferous forests are the most common, and are dominated by coast redwood and Douglas fir. Other conifer species found in the FLA include Monterey pine, knobcone pine, bishop pine, Santa Cruz cypress, and Monterey cypress. Broadleaf species found in the FLA include tanoak, madrone, arroyo willow, red alder, live oak, California buckeye, California bay, big leaf maple, and Oregon ash. Understory plants include California hazel, blue-myrtle, poison oak, and various ferns. (San Mateo, 1971)

As of 1986, there were 23,000 acres of timberland owned by IPFs in San Mateo and Santa Cruz Counties, and 167,000 acres of timberland owned by NIPFs. (USDA, 1986b) Roughly one-third of the Santa Cruz County portion of the FLA is considered timberland by the County Planning Department. (Santa Cruz County, 1995b) The two counties' private forestlands produced 32 million BF of timber in 1993. (TTD, 1994a) The two counties also encompass 14,000 acres of coast live oak forest, 12,000 acres of interior/canyon live oak forest, and 4,000 acres of montane hardwood mix. Overall, 87% of these oak woodlands are privately owned. (FRRAP, 1993)

Major watersheds and waterways in Santa Cruz County include Waddell Creek, Scott / Mill / Big Creek, the San Lorenzo River and its tributaries, San Vicente, Corvalitos, and Soquel Creek / Paquo River. The San Mateo County General Plan also identifies numerous riparian corridors which are considered sensitive habitat, including Pilarcitos Creek, Arroyo Leon, Purisma Creek, Tunitas Creek, Pomponio Creek, Gazos Creek, Whitehouse Creek, and San Gregorio, Pescadero, and Butano Creeks and their tributaries. Streams and rivers which Santa Cruz County has identified as having important riparian and biotic resources are listed in Appendix H, Table VI. A number of the FLA's major watersheds and waterways currently or historically provided important salmon habitat. Big Creek, Gazos Creek, Pescadero Creek, Scott Creek, and Waddell Creek all have existing or potential coho habitat, and most major streams provided habitat for at least one species of anadromous fish in the past. (CDF, 1994; Deming, 1995) Along with Pescadero Creek, San Gregorio and Butano Creek also supported steelhead runs of up to 3,000 fish as of the early 1980s. (San Mateo, 1986) Resident fish have also been important to the local ecology and economy; a number of San Mateo County's streams, for example, provided habitat for stickleback, rainbow trout, and brown trout. (San Mateo, 1986)

At least 46 rare plants, animals, and natural communities inhabit the FLA, as indicated by the State's Natural Diversity Data Base. These include the marbled murrelet, foothill yellow-legged frog, Montara manzanita, silverleaf manzanita, Monterey pine forest, north central coast short-run coho streams, north central coast steelhead / sculpin streams, Santa Cruz cypress, and serpentine bunchgrass. (See Appendix H, Table III, for species and communities found in the FLA.) Thirty-four significant natural areas, which are particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity, have also been identified in the FLA. (See Appendix H, Table IV.) These areas encompass roughly 48,000 acres. (DFG, 1994b)

The most frequently recognized threats to private forestlands, forest resources, and traditional forest uses in the Central Coast FLA are continued impacts to water quality, fisheries, forest productivity, and wildlife habitat which stem from past forest management practices, as well as continued encroachment of non-forest development, and subsequent conflicts between forest and non-forest land uses. Most of the Santa Cruz Mountains was clear cut from 1900 to the 1930s, and again in the 1950s. As a result, much of the FLA's forests lack key habitat components for wildlife and fish species such as marbled murrelet, steelhead, and coho salmon which rely upon older seral stages, including snags and down logs. (Singer, 1995; Herzberg, 1995b)

Forestry practices used during these time periods also altered stream structures, by leading to excessive erosion, sedimentation and build-up of logging debris in waterways, causing continued impacts to salmon habitat and flooding in nearby towns. Recognition of such problems in the Pescadero-Butano Creek watershed led to the

formation of a Coordinated Resource Management Program. However, other watersheds in the FLA have received less attention. These include San Gregorio, Lobitos, Gazos, and Pilarcitos Creeks. (Koenig, 1995; Herzerg, 1995a) Roughly 372,205 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994) Likewise, 261,106 acres of land are located in highly erodible watersheds; development in these watersheds is particularly likely to impact soils and water quality. (CDC, 1994b)

Because of its location near the San Francisco Bay Area, non-forest development in and around much of the FLA is already significant. Population and development pressures are likely to continue, leading to further parcelization, development conversions, and management conflicts. Housing densities in roughly half of the FLA are already at 1 house / 40 acres to 1 house / 160 acres, and the population of Santa Cruz County is expected to increase by 20% between 1990 to 2005. (SPP, 1994c; Santa Cruz County, 1995a) The County has also indicated that there is potential for Certificate of Compliance-based parcel subdivisions below minimum parcel sizes in some areas. (PFT, 1994a)

Non-forest development is also leading to indirect impacts to forest resources and traditional forest uses in San Mateo County. As with urban / wildlands interfaces in other parts of the state, development in the forested areas of the FLA is reducing forest managers' ability to manage fuel loads through natural fire regimes. The San Mateo County Environmental Services Agency indicates that conflicts between timber management activities and neighboring residential uses are becoming increasingly problematic as well. Such conflicts involving concerns with noise, windthrow, erosion, and aesthetics have been common in the San Gregorio, La Honda, and Pescadero service centers, and in areas undergoing subdivision, including the Skyline area, the La Honda / Loma Mar area, and in the coastal zone. (Koenig, 1995) Private forestland owners and managers in San Mateo County are also concerned with exotic plants and other problem species, and development patterns can contribute to their spread. (Holzman, 1995)

FLA Implementation

FLA-Specific Conservation Objectives for the Central Coast FLA

CDF, the SFSCC, and the Forest Service will use the Program's conservation goals and objectives to determine which eligible applicant parcels will receive priority for participation in the Program. (The Program's conservation goals and objectives are discussed in Section V.) In addition, the conservation goals and objectives will provide

guidance to CDF and to landowners who wish to participate in the Program by providing basic direction in easement design and resource management.

All of the Program's conservation goals are applicable to the Central Coast FLA. As discussed in Section V, these goals translate into a number of conservation objectives. The following conservation objectives are particularly applicable to the Central Coast FLA:

- *In order to prevent future conversions of forestland and forest resources; protect opportunities for continuation of traditional forest uses:*

  Minimize the level of housing and non-forest development to reduce risk of catastrophic fire to forest resources, to maintain opportunities for the appropriate use of fire in forest management, and to prevent conflicts between forest and non-forest land uses.

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare and unique plant communities, including those found on less common soil types.

  Promote the removal and exclusion of invasive, exotic plant species.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect habitat along riparian corridors and ridgetops.

  Protect habitat between public lands and other lands managed for wildlife habitat. (See Appendix H, Table V, for a list of public lands in the FLA.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect existing stands of later seral stage forest and ecological old growth.

  Promote management for natural range of seral stages and related forest structures, including snags and down logs, across landscapes.

  Protect and restore riparian habitat and related forest types.

- *In order to protect water quality, fisheries, and water supplies:*

  Protect and restore salmon habitat, especially riparian areas, watercourse structures, instream flows, and related characteristics.

  Minimize actual and potential erosion, sedimentation, and other impacts to water quality, including impacts caused by existing roads and other past management activities.

Additional FLA-specific conservation objectives may be identified over time as regional and local conservation assessments and planning efforts, such as those being conducted by the Bioregional Group for the Santa Cruz Mountains, are developed.

Landowners may also protect other traditional forest uses and forest resources through the Program if they so desire. In ranking applicant parcels, CDF, the SFSCC, and the Forest Service will put a priority on those parcels whose landowners seek to accomplish the Program's conservation goals and objectives. Applications which propose to protect other resources and traditional uses, such as public recreation, cultural resources, or scenic enjoyment, may also receive priority if the landowners seek to accomplish a sufficient number of the Program's conservation goals as well.

Public Benefits Derived From Establishing the FLA:

Establishing the Central Coast FLA will facilitate and encourage voluntary efforts by private forestland owners to protect and / or restore the forest landbase, forest health and ecosystem function, water quality and other watershed values, biodiversity, fish and wildlife habitat, listed and sensitive species habitat, and opportunities for the production of forest products for the benefit of current and future generations. In some cases, landowners may also choose to benefit the public by protecting other forest resources and traditional uses defined by the SFSCC such as public recreation, cultural resources, or scenic enjoyment.

Resource Protection Mechanisms for the Central Coast FLA:

Conservation easements purchased by the USDA Forest Service, or donated to the Forest Service, to other eligible government agencies, or to eligible land trusts, will be the Program's tool of preference for protecting environmental values and for establishing site-specific conservation and management objectives in cooperation with willing landowners. The Program's approach to using conservation easements is discussed further in Section V.

Local Support for the Central Coast FLA:

The following local governments, organizations, and businesses have expressed their support for the Program: County of San Mateo, Board of Supervisors, by resolution; County of San Mateo, Planning Department; County of Santa Cruz, Board of Supervisors, by resolution; County of Santa Cruz, Planning Department; San Francisco Water District; and the California Native Plant Society.

Other local organizations which have compatible goals and policies include: Santa Cruz Mountains Biodiversity Task Force; Pescadero-Butano Creek Watershed CRMP; East Palo Alto Historical & Agricultural Preservation Society; Peninsula Open Space

Trust; Semperivirens Fund; Sierra Club, Loma Prieta Chapter; Federation of Fly Fishermen; Coastside Creek Watch; Committee for Green Foothills; and the Land Trust for Santa Cruz County.

Government Entities Which Are Eligible To Assume Monitoring Responsibilities For Easements Established in the FLA:

In addition to the non-profit land trusts listed above, as well as other qualified governmental and non-governmental organizations, the following Federal, State, and local agencies are eligible to assume responsibility for establishing and monitoring easements in the Central Coast FLA:

- USDA Forest Service
- California Department of Forestry & Fire Protection
- California Department of Fish & Game
- Resource Conservation Districts: San Mateo and Santa Cruz County
- San Mateo County
- Santa Cruz County

X. THE FOREST LEGACY AREAS OF RIVERSIDE COUNTY

FLA Locations

Map VI depicts the five FLAs which are located in Riverside County. The FLAs cover parts of the San Bernardino, San Jacinto, and Santa Ana Mountains in the Southwest Bioregion.

Oak Glen/Cherry Valley FLA:

The Oak Glen / Cherry Valley FLA is located along the northern border of Riverside County, east of the City of Riverside and Interstate 10, and south and west of the San Bernardino National Forest and the Morongo Indian Reservation.

Twin Pines FLA:

The Twin Pines FLA is located in northwestern Riverside County between the southern portion of the Morongo Indian Reservation and the San Bernardino National Forest. The FLA lies east of Mount Edna and south of Barker Peak.

Oak Mountain/Tucalota Creek FLA:

The Oak Mountain / Tucalota Creek FLA is located in southwestern Riverside County, running east from Skinner Reservoir to the San Bernardino National Forest, and north from Vail Lake towards the City of Hemet.

Tenaja/Santa Rosa FLA:

The Tenaja / Santa Rosa FLA is located in southwestern Riverside County along the San Diego County border. The FLA runs east from the Cleveland National Forest to Highways 71 and 15, and south from Lake Elsinore to the County line.

Anza FLA:

The Anza FLA is located in south central Riverside County along the southern edge of the San Bernardino National Forest between the Cahuilla Indian Reservation and the Santa Rosa Indian Reservation.

Boundary Descriptions

Oak Glen/Cherry Valley FLA:

The Oak Glen / Cherry Valley FLA is defined as those lands lying within the following boundary, with the exception of lands within the proclamation boundary

Map VI.

FOREST LEGACY AREAS OF RIVERSIDE COUNTY

of the San Bernadino National Forest, any other public lands, or lands within incorporated areas. From the north quarter corner of Section 18, T2S/R1W, proceed east along the section lines to the northeast section corner of Section 13, thence south to the east quarter corner of Section 18, T2S/R1E, thence east to the west quarter corner of Section 17, thence south to the southeast section corner of Section 19, thence west to the southwest section corner of Section 19, thence south to the southwest section corner of Section 30, thence east to the west sixteenth corner between Section 32 and Section 29, thence south to the west sixteenth corner between Section 32 and Section 5 of the adjoining township, thence west to the southwest section corner of Section 31, thence north to the north sixteenth corner between Section 31 and Section 36 of T2S/R1W, thence west to the center north sixteenth corner of Section 36, thence north to the center quarter corner of Section 25, thence west to the west quarter corner of Section 25, thence north to the northwest section corner of Section 25, thence west along the section lines to the southwest section corner of Section 19, thence north to the northwest section corner of Section 19, thence east to the north quarter corner of Section 19, thence north to close at the starting point, the north quarter corner of Section 18.

Twin Pines FLA:

The Twin Pines FLA is defined as those lands lying within the following boundary, with the exception of lands within the proclamation boundaries of the San Bernadino National Forest, any other public lands, or lands within any incorporated areas. From the northwest section corner of Section 35, T3S/R1E, proceed east to the northeast section corner of Section 35, thence north to the northwest section corner of Section 25, thence east to the northeast section corner of Section 25 and the boundary of the San Bernadino National Forest, thence south to the southeast corner of Section 36, thence west to the BLM parcel in Section 36, thence north, west, and south along the BLM boundary to the southeast corner of Section 35, thence west along the south edge of Section 35 to the southwest corner of Section 35, and thence north to the starting point.

Oak Mountain/Tucalota Creek FLA:

The Oak Mountain/Tucalota Creek FLA is defined as those lands lying within the following boundary, with the exception of lands within the proclamation boundary of the San Bernadino National Forest, any other public lands, or lands within any incorporated areas. From the northwest section corner of Section 18, T6S/R1W, proceed east, along the section lines to the northeast section corner of Section 14, thence north to the northwest section corner of Section 1, thence east to the northeast section corner of Section 5, T6S/R1E, thence south to the northeast section corner of Section 17, thence east to the northeast section corner of Section 16, thence south to the southwest section corner of Section 10, thence east to the northeast section corner of Section 15, thence south to the west quarter corner of Section 26, thence east to the east quarter corner of Section 25, thence south to the north sixteenth corner between Sections 36 and

31 of the adjoining range, thence west to a witness point demarking the northwest corner of a parcel of BLM land, thence south to the southwest corner of the same parcel of BLM land which lies on the township line between Section 36 and Section 1 of the adjoining township, thence east to the northeast section corner of Section 1, T7S/R1E, thence south to the southeast section corner of Section 12, thence west along the section lines to the southwest section corner of Section 7, thence south along the range line to the southeast section corner of Section 25, T7S/R1W, thence west along the section lines to the street Via De Oro where it crosses the section line between Sections 28 and 33, thence east and southerly along Via De Oro to the intersection of Ladera Vista Drive, thence south and westerly along Ladera Vista Drive to the intersection with Chaparral Drive, thence north and west and northerly along Chaparral Drive to the intersection with Avenida Bravura, thence westerly on Avenida Bravura where it crosses De Portola Road and becomes Monte De Oro Road continuing westerly to the intersection of Camino Del Vino, thence northerly on Camino Del Vino to where it intersects the range line between Section 18, T7S/R1W, and Section 13, T7S/R2W, thence north along the range line to close at the starting point, the northwest section corner of Section 18, T6S/R1W.

Tenaja/Santa Rosa FLA:

The Tenaja/Santa Rosa FLA is defined as those lands lying within the following boundary, with the exception of lands within the proclamation boundary of the Cleveland National Forest, any other public lands, or lands within any incorporated areas. From the point where the San Diego County line, the Riverside County line, the Cleveland National Forest boundary, and the Santa Rosa Mexican Land Grant Boundary intersect, proceed northeasterly along the National Forest boundary to the point where the National Forest boundary, the Laguna Mexican Land Grant and the Santa Rosa Mexican Land Grant intersect, thence southeasterly along the boundary between the Laguna Mexican Land Grant and Santa Rosa Mexican Land Grant to the point where this boundary intersects the Temecula Mexican Land Grant boundary, thence southeasterly along the boundary between the Temecula Mexican Land Grant and Santa Rosa Mexican Land Grant to the point where the boundaries of these two land grants diverge, thence southwesterly along the boundary of the Santa Rosa Mexican Land Grant to its southern-most point, thence northwesterly along the boundary of the Santa Rosa Mexican Land Grant through its convergence with the Riverside County and San Diego County lines to the western-most point of the land grant, thence northeasterly to close at the starting point, the point of intersection of the San Diego County line, the Riverside County line, the National Forest boundary and the Santa Rosa Mexican Land Grant boundary.

Anza FLA:

The Anza FLA is defined as those lands lying within the following boundary, with the exception of lands within the proclamation boundary of the San Bernadino National Forest, any public lands, or lands within any incorporated areas. From the northwest section corner of Section 9, T7S / R3E, proceed east to the northeast section corner of Section 11, thence south to the southeast section corner of Section 11, thence west to the southwest section corner of Section 9, thence north to close at the starting point, the northwest section corner of Section 9.

As noted in Appendix J, official maps depicting the FLA at a larger scale are available for viewing at CDF.

Forest Resources and Threats

The FLAs in Riverside County encompass much of the County's remaining hardwood forest resources. These resources have been highly fragmented by non-forest development, and continued population growth and attendant development for non-forest uses are expected to be the principal threat to these forestlands in the future. The county's population is expected to increase by 40% or more between 1990 and 2005. (Finance, 1990) One third of the lands enrolled as Agricultural Preserves under the *Williamson Act* are currently in non-renewal, suggesting that landowners anticipate significant development opportunities. (CDC, 1994a) In some cases, continued conversion of forestland may also limit options for management of forest habitat utilized by threatened and endangered species. Riverside County is one of the counties with the highest number of threatened and endangered plant and animal species in the U.S.. Twenty-six threatened and endangered species are associated with different forest types in the southern Nevada / Sonoran Basin Region, which includes Riverside County. (USDA, 1994)

Oak Glen/Cherry Valley FLA:

The Oak Glen / Cherry Valley FLA encompasses one of the County's few remaining foothill oak woodland communities. The FLA includes some riparian areas; major waterways which are located partly in the FLA include the San Gorgonio River and Hathaway Creek. Rare plants, animals, and natural communities in the FLA include the Los Angeles pocket mouse, as indicated by the State's Natural Diversity Data Base. In addition, private forestlands in the FLA which are managed for traditional forest uses can help serve to buffer the resources of the San Bernardino National Forest and the Morongo Indian Reservation, and can begin to protect habitat connectivity to other parts of the San Bernardino National Forest to the south.

Population pressure and non-forest development are the primary threats to private forestlands in the Oak Glen / Cherry Valley FLA, although watershed impacts are also

of concern. Roughly one third of the land in the FLA is already experiencing population and development pressure, as indicated by existing housing densities of one house per 40 acres to one house per 160 acres. Residential development projects on rural lands outside of Yucaipa and other cities and towns in the vicinity of the FLA are also common, and are being built in areas with severe fire disaster potential. (Kelley, 1994; SPP, 1994b) Roughly 9,248 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Twin Pines FLA:

The Twin Pines FLA also includes one of the County's few remaining foothill oak woodland communities, as well as coast live oak and riparian forest. The FLA includes a tributary of the San Gorgonio River, and is considered to have high value wildlife habitat. (Douthit, 1994) Private forestlands in the FLA which are managed for traditional forest uses, including wildlife habitat, can help preserve habitat connectivity between the San Bernardino National Forest and Bureau of Land Management (BLM) lands to the west, and can begin to protect connectivity to other parts of the San Bernardino National Forest to the north.

Population pressure and non-forest development are the primary threats to private forestlands in the Twin Pines FLA. Roughly half of the FLA is already experiencing population and development pressure, as indicated by existing housing densities of one house per 40 acres to one house per 160 acres. (SPP, 1994c) Roughly 4,692 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Oak Mountain/Tucalota Creek FLA:

The Oak Mountain / Tucolota Creek FLA includes some of the last oak savannah - brushland community in Riverside County, as well as coast live oak and riparian forest areas. Waterways located in the FLA include Tucalota Creek, Cactus Valley, Willow Canyon, Rawsen Canyon, and parts of Glenoak Valley. The FLA also encompasses Black and Oak Mountains. At least nine rare plants, animals, and natural communities inhabit the FLA, as indicated by the State's Natural Diversity Data Base, including southern willow scrub and southern coast live oak riparian forest. (See Appendix H, Table III, for species and communities found in the FLA.) Seven significant natural areas, which are particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity, have also been identified in the FLA. (See Appendix H, Table IV.) These areas encompass roughly 7,974 acres. (DFG, 1994b) Private forestlands in the FLA can also provide

habitat connectivity to BLM lands in the FLA, as well as to the Cleveland National Forest to the southwest.

Population and non-forest development pressures are the principal threats to the FLA's private forestlands and forest resources. Roughly half of the FLA is already developed at one house per 40 acres to one per 160 acres, and future population and development conversion threats are considered to be high. (SPP, 1994c; Douthit, 1994) Much of the FLA is within severe fire disaster potential areas, and additional development will also impede fire risk management efforts. (SPP, 1994b) Roughly 54,776 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Tenaja/Santa Rosa FLA:

The Tenaja / Santa Rosa FLA covers the Santa Rosa Plateau, where much of the remaining oak grassland community in Riverside County is located, as are stands of rare Engelmann oak woodlands. (SPP, 1995; Douthit, 1994) The FLA also encompasses the headwaters of De Luz Creek, Sandia Canyon, the Mesa de Colorado and Squaw Mountain, the Santa Rosa Plateau Ecological Reserve, and a number of vernal pools. (Laurence, 1994; Douthit, 1994) At least 16 rare plants, animals, and natural communities inhabit the FLA, as indicated by the State's Natural Diversity Data Base, including southern sycamore alder riparian woodland and California red-legged frog. (See Appendix H, Table III, for species and communities found in the FLA.) One significant natural areas encompassing 10,224 acres has also been identified in the FLA. (DFG, 1994b) (See Appendix H, Table IV.)

As with other FLAs in Riverside County, population pressures and non-forest development are a principle threat to the Tenaja / Santa Rosa FLA's private forestlands and their resources. Over half of the FLA is already developed at levels of one house per 40 acres to one per 160 acres, and development pressure for five and ten acre homesites is considered to be high. (SPP, 1994c; Laurence, 1994) The FLA also includes lands where the risk of severe fire is high. (SPP, 1994b; Laurence, 1994) In addition, roughly 48,130 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Anza FLA:

Along with the Oak Glen / Cherry Valley and Twin Pines FLAs, the Anza FLA encompasses most of the remaining foothill oak woodland community in Riverside County, as well as coast live oak forests. The FLA covers Burnt Valley to the edge of the Thomas Mountains, and includes some riparian forest areas. Private forestlands in

the FLA can also help maintain habitat connectivity between the San Bernardino National Forest and BLM lands to south, and thereby also to the Cleveland National Forest.

While non-forest development pressures are a primary threat to private forestlands in the FLA, watershed impacts are also of concern. Existing housing densities are already at one house per 40 acres to one per 160 acres in roughly 40% of the FLA. (SPP, 1994c) Over 1,940 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994) The potential for severe fire disasters in the FLA are also significant. (SPP, 1994b)

FLA Implementation

FLA-Specific Conservation Objectives for the Riverside County FLAs:

CDF, the SFSCC, and the Forest Service will use the Program's conservation goals and objectives to determine which eligible applicant parcels will receive priority for participation in the Program. (The Program's conservation goals and objectives are discussed in Section V.) In addition, the conservation goals and objectives will provide guidance to CDF and to landowners who wish to participate in the Program by providing basic direction in easement design and resource management.

All of the Program's conservation goals are applicable to the Riverside County FLAs. As discussed in Section V, these goals translate into a number of conservation objectives. The following specific conservation objectives are particularly applicable to the Riverside County FLAs:

FLA-Specific Conservation Objectives -- Oak Glen/Cherry Valley FLA:

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values in and around the FLA, including the San Bernardino National Forest. (Areas needed for habitat connectivity may not all be fully forested.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of foothill oak woodland communities.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, including the Los Angeles pocket

mouse, natural communities, and significant natural areas.

Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

FLA-Specific Conservation Objectives -- Twin Pines FLA:

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values in and around the FLA, including the San Bernardino National Forest and BLM lands. (Areas needed for habitat connectivity may not all be fully forested.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of foothill oak woodland communities and coast live oak riparian forest.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

FLA-Specific Conservation Objectives -- Oak Mountain/Tucalota Creek FLA:

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values in and around the FLA, including the San Bernardino National Forest, Cleveland National Forest, and BLM lands. (Areas needed for habitat connectivity may not all be fully forested.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of oak savannah - brushland communities and southern coast live oak forest.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, including southern willow scrub, habitat for rare animals, natural communities, and significant natural areas, including those listed in Appendix H, Tables III and IV.

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

FLA-Specific Conservation Objectives --Tenaja/Santa Rosa FLA:

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values in and around the FLA, including the Cleveland National Forest, Camp Pendleton, and the Santa Rosa Plateau Ecological Reserve. (Areas needed for habitat connectivity may not all be fully forested.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of oak grassland communities and Engelmann oaks.

  Protect and promote restoration of riparian forest vegetation and habitats, including vernal pools.

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, natural communities, including

southern sycamore alder riparian woodland, and significant natural areas, including those listed in Appendix H, Tables III and IV.

Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

FLA-Specific Conservation Objectives -- Anza FLA:

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values in and around the FLA, including the San Bernardino National Forest, Cleveland National Forest, and BLM lands. (Areas needed for habitat connectivity may not all be fully forested.)

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of foothill oak woodland communities and coast live oaks.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

Landowners within the Riverside County FLAs may also protect other traditional forest uses and forest resources through the Program if they so desire. In ranking applicant parcels, CDF, the SFSCC, and the Forest Service will put a priority on those parcels whose landowners seek to accomplish the Program's conservation goals and objectives. Applications which propose to protect other resources and traditional uses, such as public recreation, cultural resources, or scenic enjoyment, may also receive priority if the landowners seek to accomplish a sufficient number of the Program's conservation goals as well.

Public Benefits Derived From Establishing the FLAs:

Establishing the Riverside County FLAs will facilitate and encourage voluntary efforts by private forestland owners to protect and/or restore the forest landbase, forest health and ecosystem function, water quality and other watershed values, biodiversity, fish and wildlife habitat, and listed and sensitive species habitat for the benefit of current and future generations. In some cases, landowners may also choose to benefit the public by protecting other forest resources and traditional uses defined by the SFSCC such as public recreation, cultural resources, or scenic enjoyment.

Resource Protection Mechanisms for the FLAs:

Conservation easements purchased by the USDA Forest Service, or donated to the Forest Service, to other eligible government agencies, or to eligible land trusts, will be the Program's tool of preference for protecting environmental values and for establishing site-specific conservation and management objectives in cooperation with willing landowners. The Program's approach to using conservation easements is discussed further in Section V.

Local Support for the FLAs:

The following local governments, organizations, and businesses have expressed their support for the Program: County of Riverside, Planning Dept.; Riverside Land Conservancy; Crafton Hills Open Space Conservancy; San Bernardino Valley Audubon Society; The Nature Conservancy; and the Endangered Habitats League.

Other local organizations which have compatible goals and policies include: Coachella Valley Mountains Trust; Coachella Valley Mountains Conservancy; and the Chino Hills Land Conservancy.

Government Entities Which Are Eligible To Assume Monitoring Responsibilities For Easements Acquired in the FLAs:

In addition to the non-profit land trusts listed above, as well as other qualified governmental and non-governmental organizations, the following Federal, State, and local agencies are eligible to assume responsibility for establishing and monitoring easements in the FLAs in Riverside County:

- USDA Forest Service
- USDOI Bureau of Land Management
- California Department of Forestry & Fire Protection
- California Department of Fish & Game
- Resource Conservation Districts: East Valley RCD (Oak Glen/Cherry Valley and Twin Pines FLA), San Jacinto Basin RCD (Oak Mountain/Tucalota Creek FLA), and

Elsinore-Murietta-Anza RCD (Oak Mountain / Tucalota Creek, Tenaja / Santa Rosa, and Anza FLAs)

- Riverside County

XI. THE FOREST LEGACY AREAS OF SAN DIEGO COUNTY

FLA Locations

Map VII depicts the eight FLAs which are located in San Diego County. The FLAs cover parts of the Santa Rosa and Laguna Mountains in the Southwest Bioregion.

De Luz FLA:

The De Luz FLA is located in northwestern San Diego County along the Riverside County line, adjacent to the Tenaja / Santa Rosa FLA of Riverside County. It extends south from the Tenaja / Santa Rosa FLA along the eastern border of Camp Pendleton.

Oak Grove FLA:

The Oak Grove FLA is located in north central San Diego County. It extends south from the Riverside County line along the eastern border of the Cleveland National Forest past the town of Oak Grove.

Rancho Pauma FLA:

The Rancho Pauma FLA is located in north central San Diego County between the southern border of the Pala Indian Reservation and Ricon Springs. The Cleveland National Forest forms its northeastern boundary.

Rancho Guejito/Boden Canyon FLA:

The Rancho Guejito FLA is located in north central San Diego County. The FLA extends southwest from the La Jolla Indian Reservation between the Cleveland National Forest and Paradise Creek Lower Hellhole Canyon Park towards the City of Escondido.

Mesa Grande FLA:

The Mesa Grande FLA is located in north central San Diego County between the Boucher Hill FLA and the Warner Springs FLA. The Mesa Grande FLA extends south from Highway 76 to the southwestern portion of the Santa Ysabel Indian Reservation, running between the Cleveland National Forest and the northwestern portion of the Santa Ysabel Indian Reservation.

Map VII.

FOREST LEGACY AREAS OF SAN DIEGO COUNTY

Warner Springs FLA:

The Warner Springs FLA is located in north central San Diego County, extending east from Highway 76 near Lake Henshaw to the Los Coyotes Indian Reservation and the town of Ranchita. The FLA includes some quasi-public lands which are owned by a water district.

Pine Hills FLA:

The Pine Hills FLA is located in central San Diego County, where it extends south from the eastern half of the Santa Ysabel Indian Reservation to the southern segment of the Cleveland National Forest and Cuyamaca Rancho State Park. It is bounded on the east by BLM lands and the Anza Borrego Desert State Park, and on the west by Highway 79 and 78. The town of Julian is located along the eastern edge of the FLA.

Descanso FLA:

The Descanso FLA is located in south central San Diego County, extending south from the Cuyamaca Rancho State Park to the southern segment of the Cleveland National Forest at the town of Descanso and Highway 8.

Boundary Descriptions

De Luz FLA:

The De Luz FLA is defined as the lands lying within the following boundary, with the exception of three Bureau of Land Management holdings, lands within the proclamation boundary of the Cleveland National Forest, any other public lands, and lands within any incorporated areas. The FLA's northern boundary runs southeast along the San Diego/Riverside County line from the boundary of the Cleveland National Forest in Section 11, T8S/R5W, to the east boundary of Section 36. The eastern FLA boundary continues south along the County line and east along on the north boundary of Section 6, T9S/R3W. The southern boundary then follows the eastern edges of Sections 6 and 7. The southern boundary continues west along the southern edges of Section 7 and Section 12, T9S/R4W, to the boundary of Camp Pendleton. The FLA boundary then follows the northern Camp boundary to the Cleveland National Forest at the southeast corner of Section 28, T8S/R5W. The western FLA boundary then follows the National Forest boundary east and north to the San Diego/Riverside County line in Section 11, T8S/R5W.

Oak Grove FLA:

The Oak Grove FLA is defined as the lands lying within the following boundary, with the exception of six Bureau of Land Management holdings, lands within the proclamation boundary of the Cleveland National Forest, any other public lands, and lands within any incorporated areas. Starting at the eastern edge of the BLM holding in Section 2, T9S/R1E, the northern FLA boundary proceeds east along the San Diego/Riverside County line to the northwest corner of the BLM land in Section 5, T9S/R2E. The eastern FLA boundary then follows the western boundary of the BLM lands in Sections 5, 4, 9, and 10 to the eastern boundary of Section 10. The boundary then follows the eastern boundary of Section 10 to the BLM lands in the southern portion of Section 10, and continues south along the western boundary of the BLM lands in Sections 10, 15, 14, and 23 to the eastern boundary of Section 23. The boundary then follows the boundary of the BLM lands south and east through Sections 23, 26, and 25 to the boundary of the Cleveland National Forest in Section 30, T9S/R3E. The boundary then runs south along the National Forest boundary and the eastern edge of Section 1, T10S/R2E, to the northeast corner of the BLM land in Section 1. The FLA's southern boundary then runs west along the northern boundary of the BLM holding in Section 1 to the boundary of the Cleveland National Forest. The western FLA boundary then follows the National Forest boundary northwest to the BLM lands in Section 12, T9S/R1E. The boundary continues north and west along the western edge of the BLM lands in Sections 12, 11, and 2 to the San Diego/Riverside County line.

Rancho Pauma FLA:

The Rancho Pauma FLA is defined as the lands lying within the following boundary, with the exception of lands within the proclamation boundary of the Cleveland National Forest, any other public lands, two units administered by the Bureau of Indian Affairs, or lands within incorporated areas. The northwest FLA boundary follows the boundaries of the Pala Indian Reservation, the Cleveland National Forest, and the Pauma land grant southeast from Section 33, T9S/R1W, to the edge of the Pauma land grant and the National Forest in Section 8, T10S/R1E. The eastern FLA boundary then runs southwest along the boundary of the La Jolla Indian Reservation through Section 17 to Highway 76. The southern and western FLA boundaries then follow Highway 76 west, southwest and northwest to the Pauma land grant boundary in Section 5, T10/R1W and then follows the land grant boundary and the boundary of the Pala Indian Reservation to the starting point in Section 33.

Rancho Guejito/Boden Canyon FLA:

The Rancho Guejito/Boden Canyon FLA is defined as the lands lying within the following boundary, with the exception of lands within the proclamation boundary of the Cleveland National Forest, any other public lands, and lands within any incorporated areas. The northern boundary begins in Section 4, T11S/R1E, and runs

east along the northern edge of Section 4 and the western and southern edges of the BLM lands in Sections 3 and 2 to the boundary of the Cleveland National Forest in Section 1. The FLA boundary continues north along the National Forest boundary to the southwest corner of Section 36, T10S/R1E, and then north along the boundary of the La Jolla Indian Reservation to the northwest corner of Section 36. The FLA boundary then continues east along the Reservation boundary and the boundary of the Cleveland National Forest to the north quarter corner of Section 31, T10S/R2E, and then south along the National Forest boundary to the south quarter corner of Section 31. From there, the FLA boundary runs west to the southwest corner of Section 36, T10S/R1E, and then south along the boundary of the Cleveland National Forest boundary to the southeast corner of Section 29, T12S/R1E. The southern FLA boundary continues west along the southern boundary of Section 29 to the eastern boundary of the BLM lands in Section 29. The western FLA boundary follows the BLM boundary north and west to the northwest corner of Section 29, where it continues north on the eastern boundary of Sections 20 and 17 to the northeast corner of the southeast quarter of Section 18. The boundary then runs west to the northeast corner of the southeast quarter of Section 14, T12S/R1W. The FLA boundary then follows the western edge of Section 13 north to the old land grant boundary on the edge of Sections 11 and 12, and continues northeast along the land grant boundary to the BLM lands in Section 17, T11S/R1E. The FLA boundary continues along eastern boundary of the BLM lands in Sections 17, 9, and 4 to the starting point.

Mesa Grande FLA:

The Mesa Grande FLA is defined as the lands lying within the following boundary, with the exception of two BLM holdings, lands within the proclamation boundary of the Cleveland National Forest, any other public lands, and lands within any incorporated areas. Beginning at the southwest corner of Section 3, T11S/R2E, the FLA boundary follows the Cleveland National Forest boundary east to the southwestern edge of Lake Henshaw. The eastern FLA boundary then follows the edge of Lake Henshaw southeast to the eastern edge of Section 24, T11S/R2E. From this point, the boundary runs south to the southern edge of Section 24 and the Santa Ysabel Indian Reservation, and then runs west, south, and east along the Reservation boundary to the eastern edge of Section 35. The boundary then continues south to the southeast corner of Section 35. From this point, the southern FLA boundary follows the southern edges of Sections 35, 34 and 33 west to the boundary of the Cleveland National Forest. The western FLA boundary then follows the National Forest boundary north and west to the starting point.

Warner Springs FLA:

The Warner Springs FLA is defined as the lands lying within the following boundary, with the exception of any lands within the proclamation boundary of the Cleveland

National Forest, any other public lands, and lands within any incorporated areas. The northern boundary starts at the intersection of highway 79 and the southern boundary of Sections 23 and 24, T10S/R3E. It runs east on the southern boundaries of Sections 23 and 24 to the boundary of the Cleveland National Forest. The eastern FLA boundary then follows the National Forest boundary to the boundary of the Los Coyotes Indian Reservation, and then follows the Reservation boundary south to the eastern boundary of the BLM lands in Section 10, T11S/R4E, and continues south along the BLM boundary to the southern edge of Section 10. From this point, the boundary continues due south to the southern edge of Section 15. The southern FLA boundary then follows the northern boundaries of Sections 22, 21, and 20 to the San Jose del Valle land grant boundary in Section 20. The FLA boundary then follows the land grant boundary southwest to the Santa Ysabel Indian Reservation in Section 24, T11S/R3E, and continues east along the Reservation boundary to Highway 79. The western FLA boundary then follows Highway 79 to the starting point of this description.

Pine Hills FLA:

The Pine Hills FLA is defined as the lands lying within the following boundary, with the exception of any lands within the proclamation boundary of the Cleveland National Forest, four BLM holdings, any other public lands, lands administered by the Bureau of Indian Affairs, or lands within any incorporated areas. The northern boundary runs southwest along the southern edge of Santa Ysabel Indian Reservation from the intersection of Highway 79 and the Reservation near the west edge of Section 3, T12S/R3E, to the southwest corner of Section 18, T12S/R4E. The eastern FLA boundary then continues along the southern edge of Section 18, follows the eastern edge of Sections 19 and 30 south to the northeast corner of Section 31, and then continues east along the north edge of Section 32 to Highway 78. The FLA boundary then follows Highway 78 east to the western boundary of the BLM lands in Section 32, and continues south along the BLM boundary to the boundary of Anza Borega State Park at the edge of Section 23, T13S/R4E. The FLA boundary then follows the boundaries of the Park and the Cuyamaca land grant south to the northwest corner of Section 30, T14S/R5E. The southern FLA boundary continues west and north along the Park boundary to the boundary of the Cleveland National Forest at the south edge of Section 20, T13S/R4E, to encompass the Cuyamaca Reservoir. The FLA boundary then follows the National Forest boundary east, north, west, and south to the eastern edge of Section 22, T13S/R2E. The western FLA boundary continues north along the eastern edge of Sections 22, 15, and 10 to Highway 78; follows Highway 78 east to Highway 79; and follows Highway 79 north to the Santa Ysabel Indian Reservation.

Descanso FLA:

The Descanso FLA is defined as those lands lying within the following boundary, with the exception of any lands within the proclamation boundary of the Cleveland National

Forest, any other public lands, or lands within any incorporated areas. The FLA's northern boundary runs along the southern boundary of the Anza-Borrego Desert State Park from the northern edge of Section 19, T15S/R4E, to the boundary of the Cleveland National Forest. The eastern and southern FLA boundaries then follow the National Forest boundary south and west to the western edge of Section 30. The western FLA boundary then follows the western edge of Section 19 north to the southern boundary of Anza-Borrego Desert State Park in Section 19.

As noted in Appendix J, official maps depicting the FLA at a larger scale are available for viewing at CDF.

Forest Resources and Threats

Population growth and continued development for non-forest uses are the principal threats to forestlands in San Diego County. The county's population is expected to increase by 40% or more between 1990 and 2005, with housing for an additional one million people being needed by 2025. (Finance, 1990; Fairbanks, 1995) Agricultural uses are prevalent in and around much of the County's forestlands, and ten percent of the lands enrolled as Agricultural Preserves under the *Williamson Act* are currently in non-renewal. (CDC, 1994a) Over time, all private lands within the County are likely to be threatened by new development. (Fairbanks, 1995) In some cases, continued conversion of forestland may also limit options for management of forest habitat utilized by threatened and endangered species. Nationwide, San Diego County is among the counties with the highest number of threatened and endangered plant and animal species. Twenty threatened and endangered species are associated with different forest types in central and southwestern California. (USDA, 1994)

De Luz FLA:

The De Luz FLA includes riparian forest, riparian woodland, coast live oak woodland, oak riparian forest, and rare Engelmann oak woodlands. (Seibly, 1995) The Santa Margarita River flows along the southern border, which encompasses sensitive species and vegetation communities. Ross Lake, Robar Creek, Camps Creek, Cottonwood Creek, Fern Creek, and the De Luz Creek also run through the FLA, and have the potential for riparian habitat. The importance of riparian habitats and other portions of the FLA are considered to be "very high" and "high" for the purposes of regional habitat conservation planning.[xl] (SANDAG, 1995b) Sensitive animal and plant species which

[xl] The Multiple Habitat Conservation Plan being developed by the San Diego Association of Governments (SANDAG) and other local agencies is intended to help resolve land use conflicts by identifying and planning for the conservation of key habitat and migration areas for a more comprehensive range of listed species than has been previously undertaken, thereby increasing the efficiency of species

are known to inhabit the FLA include sharp-shinned hawk, turkey vulture, two-striped garter snake, Bell's sage sparrow, red-shouldered hawk, mule deer, black-shouldered kite, coastal rosy boa, San Diego horned lizard, peninsular manzanita, yellow warbler, warbling vireo, downy woodpecker, yellow-breasted chat, southern California rufous crowned sparrow, southwestern pond turtle, Cooper's hawk, black-crowned night heron, Payson's caulanthus, and Fish's mikwort. (Seibly, 1995)

As indicated by the State's Natural Diversity Data Base, six rare plants, animals, and natural communities inhabit the FLA. (See Appendix H, Table III.) In addition, two significant natural areas, which are particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity, have been identified. (See Appendix H, Table IV.) These areas encompass a total of 3,104 acres. (DFG, 1994b) If maintained for traditional forest uses, private lands in the FLA also have the potential to help provide habitat connectivity and/or to serve as buffers between Camp Pendleton, the Cleveland National Forest, the Tenaja/Santa Rosa FLA, and various BLM holdings and other public lands. A trail is also located between Cottonwood Creek and De Luz Creek.

Continued encroachment of housing and other non-forest development are considered the primary threats to private forests and forest resources in the De Luz FLA. Most of the FLA is zoned for "low density development," which allows up to one dwelling per acre. (SANDAG, 1995c) Existing development in the FLA is already significant, with housing densities ranging between one house per 40 acres to one per 160 acres in most all of the FLA. (SPP, 1994c) Water quality impacts in the FLA are also of concern, with almost 17, 614 acres of land being located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Oak Grove FLA:

The Oak Grove FLA includes coast live oak woodland, scrub oak chaparral, and mixed evergreen forest. (SANDAG, 1995a) Small amounts of riparian forest are also likely to be found along Temecula Creek, Chihuahua Creek, and in the Dameron Valley. These forest areas provide significant habitat values, and the various private lands within the FLA can help maintain habitat connectivity between the Cleveland National Forest and BLM lands and other portions of the National Forest to the east. When maintained for traditional forest uses, the private forestlands in the FLA can also serve to buffer the

conservation for local governments and developers while taking a more proactive approach to species management. In addition to habitat areas (sage scrub) for California gnatcatcher, the following forest-related species and habitat types also received priority under the plan's habitat ranking system included Cooper's hawk, California yellow-billed cuckoo, southwestern willow flycatcher, yellow-breasted chat, least Bell's vireo, mountain lion, southern mule deer, Harbison's dun skipper, Torrey Pine, Nuttahl's scrub oak, Engelmann oak, Del Mar manzanita, and peninsular manzanita. (SANDAG, 1994)

habitat areas of these public lands. A trail also follows Chihuahua Creek. In addition, one significant natural area encompassing 418 acres has been identified. (DFG, 1994b) (See Appendix H, Table IV.) A trail is also located along Chihuahua Creek.

Continued encroachment of housing and other non-forest development are considered the primary threats to private forests and forest resources in the Oak Grove FLA, although some agricultural practices in the area may also serve to convert forested areas to non-forest conditions. Existing development in the FLA is already significant, with housing densities reaching between one house per 40 acres and one per 160 acres in most of the FLA. (SPP, 1994c) Most of the non-urban land in the FLA is zoned for "low density development," which allows residential development of up to one dwelling per acre, with the remainder being zoned for "extensive agriculture," which can include both field crops and pasture. (SANDAG, 1995c) Water quality impacts in the FLA are also of concern, with almost 11,901 acres of land being located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Rancho Pauma FLA:

The Rancho Pauma FLA encompasses riparian woodlands, oak woodlands, and montane coniferous forest, including stands of rare Engelmann oaks, coast live oak, and oak riparian forest. (SANDAG, 1995a; Seibly, 1995; SPP, 1995) The FLA also includes parts of Yuima, Pauma, Jaybird, Potrero, and Plaisted Creeks, and Harrison and Sycamore Canyons, all of which have the potential for riparian habitat. Parts of the Palomar Mountains are also located within the FLA. The quality of wildlife habitat in the FLA is considered to be, in order of occurrence, "very high," "high," "moderate," and "low" for the purposes of regional habitat conservation planning. (SANDAG, 1995b) As indicated by the State's Natural Diversity Data Base, rare plants, animals, and natural communities in the FLA include the San Diego horned lizard. If maintained for traditional forest uses, private lands within the FLA can help provide habitat connectivity between the Pala, Rincon, and La Jolla Indian Reservations, as well as the San Luis Rey River, and thus potentially between northern and central segments of the Cleveland National Forest. Private lands in the FLA can also help provide a buffer for adjacent habitat areas in the Cleveland National Forest.

Population pressures and continued development of housing and other non-forest land uses are the principal threats to private forests and forest resources in the Rancho Pauma FLA. Housing densities have already reached one house per 40 acres to one per 160 acres in nearly all of the FLA, and most of the non-urban land in the FLA is zoned for "low density development," which allows residential development of up to one dwelling per acre. (SPP, 1994c; SANDAG, 1995c) Although the FLA is located within a severe fire disaster potential area, the presence of two major towns near the FLA --

Rincon Springs and Pauma Valley -- and direct highway access to the cities of Oceanside and Vista is likely to keep development pressure high. (SPP, 1994b) The remainder of the non-urban lands in the FLA are zoned for "extensive agriculture," which can include both field crops and pasture. (SANDAG, 1995c) Water quality impacts in the FLA are also of some concern, with 8,333 acres of land being located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Rancho Guejito/Boden Canyon FLA:

The Rancho Guejito / Boden Canyon FLA includes riparian woodlands, riparian forest, oak woodlands, and montane coniferous forest, including stands of coast live oak and rare Engelmann oaks. (SANDAG, 1995a; SPP, 1995; Seibly, 1995) Rodriguez Mountain, Pine Mountain, Twin Flats, and the upper drainage of Guejito Creek are also located in the FLA. Other flats in the FLA include Sycamore Twins, Bear Springs, Garlic Twins, Chimney, and Clenage. The San Dieguito River also flows along the southeastern boundary and contains riparian habitats and sensitive species. (Seibly, 1995) The quality of wildlife habitat in the FLA under SANDAG's ranking system is considered to be mostly "very high" and "high," including along Guejito Creek, with smaller amounts of "moderate" and "low" quality habitats also being present. (SANDAG, 1995b; Seibly, 1995)

The arroyo chub is among the rare plants, animals, and natural communities which inhabit the FLA, according to the State's Natural Diversity Data Base. Other plant and animal species of special concern include California Campo clarkia, San Diego sagewort, Del Mar manzanita, red-legged frog, mountain lion, Least Bell's vireo, peregrine falcon, southwestern pond turtle, dun skipper, and Fish's milkwort. Other animals which inhabit the FLA or lands adjacent to it include the western spadefoot toad, San Diego horned lizard, Arroyo southwest toad, two-striped garter snake, kangaroo rat, grasshopper sparrow, sharp-shinned hawk, and turkey vulture. (Seibly, 1995) Private lands within the FLA can also help provide habitat connectivity between the La Jolla Indian Reservation, the Paradise Creek Lower Hellhole Canyon Park, the San Pasqual Open Space Park, and the Cleveland National Forest, and can help provide a buffer for the Cleveland National Forest more generally.

Population pressures and the development of housing and other non-forest land uses are the most important threats to private forests and forest resources in the Rancho Guejito FLA, although water quality impacts are also of some concern. While housing densities do not appear to be substantial yet, with relatively little of the FLA being developed in the one house per 40 acres to one per 160 acres range, the FLA is located in close proximity to the City of Escondido, and future development pressure is likely to be high. (SPP, 1994c) Currently, most of the FLA is zoned for "extensive agriculture;" however, local land use zonings do not afford long-term protection to the landbase and forest resources. Most of the remaining non-urban land in the FLA is zoned for "low density development," which allows residential development of up to one dwelling per acre. (SANDAG, 1995c) Since the FLA is located within a severe fire disaster potential area, non-forest development would also impede efforts to manage fuel loads, increasing the risk of catastrophic fires. (SPP, 1994b) Roughly 19,236 acres of land are also located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Mesa Grande FLA:

The Mesa Grande FLA encompasses black oak woodlands, oak woodlands, mixed evergreen forest, lower montane coniferous forest, and rare Engelmann oaks, all of which are likely to provide important wildlife habitats. (SANDAG, 1995a; SPP, 1995) The FLA also includes the upper drainage of Santa Ysabel Creek, a tributary of the San Luis Rey River, and Angel Mountain. According to the State's Natural Diversity Data Base, the rare plants, animals, and natural communities which inhabit the FLA include the Descanso milk-vetch, Orcutt's brodiaea, and the velvety false-lupine. (See Appendix H, Table III) One significant natural area encompassing 255 acres has also been identified. (DFG, 1994b.) (See Appendix H, Tables IV.) Because of their location, private lands within the FLA can help maintain habitat connectivity between otherwise separate segments of the Cleveland National Forest, and between the National Forest, the Santa Ysabel Indian Reservation, and Lake Henshaw.

As with the other FLA's in San Diego County, population pressures and continued development of housing and other non-forest land uses are the principal threats to private forests and forest resources in the Mesa Grande FLA. Housing densities have already reached one house per 40 acres to one per 160 acres in roughly one third of the FLA. (SPP, 1994c) As the area is currently zoned for "extensive agriculture," which can include field crops, agricultural practices also have the potential to convert some forest habitats to nonforest conditions. (SANDAG, 1995c) Water quality impacts in the FLA have also been significant; over 12,467 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Warner Springs FLA:

Lower montane coniferous forest, black oak woodland, coast live oak woodland, south riparian scrub, and rare Engelmann oak woodlands are all found within the Warner Springs FLA. (SANDAG, 1995a; SPP, 1995) These forest types are all likely to provide important wildlife habitat. Buena Vista Creek, San Ysidro Creek, the Matagual Valley, and the northern edge of the Volcan Mountains are also located in the FLA. According to the State's Natural Diversity Data Base, the rare plants, animals, and natural communities which inhabit the FLA include Payson's jewelflower, Stephens kangaroo rat, and San Diego horned lizard. (See Appendix H, Table III.) The Pacific Crest National Scenic Trail also runs through the FLA.

Several factors are likely to facilitate increases in the population and development pressures in the FLA. The FLA is located along several major highways and abuts the towns of Warner Springs, Morretis, and Ranchita. Those lands which are not within the water district are all zoned for "low density development," allowing residential

development of up to one dwelling per acre. (SANDAG, 1995c) The risk of severe fire disasters in the FLA is also high, compounding the impacts which are likely to result from non-forest development in the area. (SPP, 1994b)

Pine Hills FLA:

The Pine Hills FLA includes oak woodlands, black oak woodlands, rare Engelmann oak woodlands, lower montane coniferous forest, and mixed evergreen forest. (SANDAG, 1995a; SPP, 1995) Riparian areas in the FLA include Santa Ysabel Creek, upper reaches of San Felipe Creek, Harper Creek, and examples of south vernal pools. Banner Canyon and North Peak are also located in the FLA. At least fifteen rare plants, animals, and natural communities inhabit the FLA, including the Otay manzanita and the San Diego mountain kingsnake, as indicated by the natural diversity database. (See Appendix H, Table III.) In addition, eight significant natural areas, which are particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity, have been identified. (See Appendix H, Table IV.) These areas encompass 4,939 acres. (DFG, 1994b) In addition to maintaining these forest types and their associated habitats, private lands within the FLA can also help provide habitat connectivity between the eastern portion of the Santa Ysabel Indian Reservation, the Cleveland National Forest, BLM lands in the Banner area, the Anza Borrego Desert State park, and Cuyamaca Rancho State Park. Protection of the FLA's forestlands will also make a valuable contribution towards maintaining habitat connectivity between the northern and southern sections of the Cleveland National Forest in San Diego County. Recreational opportunities also exist along the Cuyamaca Resevoir, the California Riding and Hiking Trail, and a trail along Santa Ysabel Creek.

Population pressures and the conversion threats from the development of housing and other non-forest land uses are already significant in the FLA. Housing densities have reached the one house per 40 acres to one per 160 acres range in roughly half of the FLA. (SPP, 1994c) The potential for increased development is high, with highways connecting the area to San Diego, Oceanside, and other major destinations, and much of the FLA already being zoned for "low density development," which will allow residential development of up to one dwelling per acre. (SANDAG, 1995c) The towns of Julian, Santa Ysabel, and Banner are also located within, or within close proximity to the FLA. The remainder of the non-urban lands in the FLA are zoned for "extensive agriculture," which affords short-term protection from housing development, but can allow cover type conversions. (SANDAG, 1995c) In addition, roughly 49,382 acres of land in the FLA are located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

Descanso FLA:

The Descanso FLA encompasses coast live oak, black oak woodland, mixed evergreen forest, lower montane coniferous forest, and Jeffrey pine forest. (SANDAG, 1995a) Riparian forest types are likely to be present along Descanso Creek, which flows through the FLA. The FLA also includes at least two rare plants, Dunn's Mariposa lily and the Moreno currant. (See Appendix H, Table III.) Three significant natural areas encompassing 1,542 acres are also located in the FLA. (DFG, 1994b) (See Appendix H, Table IV.) In addition to maintaining these rare forest types, habitats, and related resources, protecting private forestlands in the FLA will also help maintain habitat connectivity among fragmented portions of the Cleveland National Forest.

As with the other FLAs in San Diego County, the Descanso FLA is threatened primarily by continued population growth and nonforest development. Most of the FLA has already experienced such pressures, as indicated by the prevalence of areas with one house per 40 acres to one per 160 acres. (SPP, 1994c) The risk of future development is particularly high, with most of the FLA being zoned for "low density development," which will allow residential development of up to one dwelling per acre, and the remainder being zoned for "single family development," which allows up to ten units per acre to be built. (SANDAG, 1995c) The FLA is also located adjacent to a major highway corridor which connects the area to the cities of El Cajon, La Mesa, and San Diego. Water quality impacts are also of some concern, with over 5,530 acres of land in the FLA located in basins whose waterways are affected by point- and non-point source pollution at levels beyond those which can be remedied through technology based controls. (SWRCB, 1994)

FLA Implementation

FLA-Specific Conservation Objectives for the San Diego County FLAs:

CDF, the SFSCC, and the Forest Service will use the Program's conservation goals and objectives to determine which eligible applicant parcels will receive priority for participation in the Program. (The Program's conservation goals and objectives are discussed in Section V.) In addition, the conservation goals and objectives will provide guidance to CDF and to landowners who wish to participate in the Program by providing basic direction in easement design and resource management.

All of the Program's conservation goals are applicable to the San Diego County FLAs. As discussed in Section V, these goals translate into a number of conservation objectives. The following conservation objectives are particularly applicable to the San Diego County FLAs:

FLA-Specific Conservation Objectives -- De Luz FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, including the sharp-shinned hawk, turkey vulture, two-striped garter snake, Bell's sage sparrow, red-shouldered hawk, mule deer, black-shouldered kite, coastal rosy boa, San Diego horned lizard, peninsular manzanita, yellow warbler, warbling vireo, downy woodpecker, yellow-breasted chat, southern California rufous crowned sparrow, southwestern pond turtle, Cooper's hawk, black-crowned night heron, Payson's caulanthus, and Fish's mikwort, as well as other rare species, natural communities, and significant natural areas, including those listed in Appendix H, Tables III and IV.

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values around the FLA, including the Camp Pendleton, the Cleveland National Forest, the Tenaja / Santa Rosa FLA, and various BLM holdings and other public lands.

  Provide habitat reserves and / or habitat connectivity as part of regional habitat conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of coast live oak woodland, oak riparian forest, rare Engelmann oak woodlands, and southern sycamore alder riparian woodland.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

- *Other conservation objectives which participating landowners may wish to meet include:*

  Protect recreation opportunities along a trail between Cottonwood Creek and De

Luz Creek.

FLA-Specific Conservation Objectives -- Oak Grove FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect significant natural areas, including those listed in Appendix H, Table IV.

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values in and around the FLA, including the Cleveland National Forest, BLM lands, and other portions of the National Forest. (Areas needed for habitat connectivity may not all be fully forested.)

  Provide habitat reserves and/or habitat connectivity as part of regional habitat conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of coast live oak woodland, scrub oak chaparral, and mixed evergreen forest.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

- *Other conservation objectives which participating landowners may wish to meet include:*

  Protect recreation opportunities along a trail along Chihuahua Creek.

FLA-Specific Conservation Objectives -- Rancho Pauma FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, including the San Diego horned lizard, natural communities, and significant natural areas,

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Provide a buffer to habitats in the Cleveland National Forest.

Protect wildlife habitat between other lands managed for habitat values in and around the FLA, which may include the Pala, Rincon, and La Jolla Indian Reservations. (Areas needed for habitat connectivity may not all be fully forested.)

Provide habitat reserves and / or habitat connectivity as part of regional habitat conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of montane coniferous forest, Engelmann oaks, coast live oak, and other oak woodlands.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source source pollution.

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

FLA-Specific Conservation Objectives -- Rancho Guejito/Boden Canyon FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, including the arroyo chub, California red-legged frog, Campo clarkia, San Diego sagewort, mountain lion, Least Bell's vireo, peregrine falcon, southwestern pond turtle, dun skipper, and Fish's milkwort, as well as natural communities, and significant natural areas.

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat and habitat connectivity between public lands and other lands managed for habitat values around the FLA, including the Cleveland National Forest and Paradise Creek Lower Hellhole Canyon Park, and possibly the La Jolla Indian Reservation and San Pasqual Open Space Park.

  Provide a buffer to habitats in the Cleveland National Forest.

  Provide habitat reserves and / or habitat connectivity as part of regional habitat

conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of oak woodlands, montane coniferous forest, and Engelmann oaks.

  Protect and promote restoration of riparian woodland and forest vegetation and habitats.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

FLA-Specific Conservation Objectives -- Mesa Grande FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, including Descanso milk-vetch, Orcutt's brodiaea, and the velvety false-lupine, habitat for rare animals, natural communities, and significant natural areas, including those listed in Appendix H, Table IV.

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values around the FLA, including the Cleveland National Forest, Lake Henshaw, and possibly the Santa Ysabel Indian Reservation. (Areas needed for habitat connectivity may not all be fully forested.)

  Provide habitat reserves and / or habitat connectivity as part of regional habitat conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of black oak woodlands, mixed evergreen forest, lower montane coniferous forest, and Engelmann oaks.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

FLA-Specific Conservation Objectives -- Warner Springs FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, natural communities, and significant natural areas, including Payson's jewelflower, Stephens kangaroo rat, and San Diego horned lizard.

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Provide habitat reserves and / or habitat connectivity as part of regional habitat conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of lower montane coniferous forest, black oak woodland, coast live oak woodland, and Engelmann oaks.

  Protect and promote restoration of riparian forest vegetation and habitats, including south riparian scrub.

- *In order to maintain and restore natural ecosystem functions:*

  Where appropriate, utilize prescribed burns or other practices to reduce any unnaturally high fire risks to forest resources and to allow for more natural fire regimes.

- *Other conservation objectives which participating landowners may wish to meet include:*

  Protect recreation opportunities along the Pacific Crest National Scenic Trail.

FLA-Specific Conservation Objectives -- Pine Hills FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, natural communities, and significant natural areas, including those listed in Appendix H, Tables III and IV.

  Protect native plants and habitat for wildlife species which are not yet considered

sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between public lands and other lands managed for habitat values in and around the FLA, including the Cleveland National Forest, BLM lands in the Banner area, the Anza Borrego Desert State Park, William Heise County Park, and Cuyamaca Rancho State Park. (Areas needed for habitat connectivity may not all be fully forested.)

  Provide habitat reserves and/or habitat connectivity as part of regional habitat conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of oak woodland, black oak woodlands, Engelmann oaks, lower montane coniferous forest, and mixed evergreen forest.

  Protect and promote restoration of riparian forest vegetation and habitats, including south vernal pools.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

- *Other conservation objectives which participating landowners may wish to meet include:*

  Protect recreation opportunities along the Cuyamaca Resevoir, the Santa Ysabel Creek trail, and the California Riding and Hiking Trail.

FLA-Specific Conservation Objectives -- Descanso FLA:

- *In order to protect wildlife habitat, rare plants, and biodiversity:*

  Protect rare plants, habitat for rare animals, and natural communities, including Dunn's Mariposa lily and the Moreno currant, as well as significant natural areas, including those listed in Appendix H, Table IV.

  Protect native plants and habitat for wildlife species which are not yet considered sensitive or threatened, but whose populations are in decline.

- *In order to maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions:*

  Protect wildlife habitat between portions of the Cleveland National Forest and

other lands managed for habitat values around the FLA. (Areas needed for habitat connectivity may not all be fully forested.)

Provide habitat reserves and / or habitat connectivity as part of regional habitat conservation plans, supplementing lands being protected by the Fish & Wildlife Service and by mitigation plans for development projects.

- *In order to protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity:*

  Protect and encourage regeneration of healthy stands of coast live oak, black oak woodland, mixed evergreen forest, lower montane coniferous forest, and Jeffrey pine forest.

  Protect and promote restoration of riparian forest vegetation and habitats.

- *In order to protect water quality, fisheries, and water supplies:*

  Identify and minimize sources of point- and nonpoint-source pollution.

Landowners within the San Diego County FLAs may also protect other traditional forest uses and forest resources through the Program if they so desire. In ranking applicant parcels, CDF, the SPSCC, and the Forest Service will put a priority on those parcels whose landowners seek to accomplish the Program's conservation goals and objectives. Applications which propose to protect other resources and traditional uses, such as public recreation, cultural resources, or scenic enjoyment, may also receive priority if the landowners seek to accomplish a sufficient number of the Program's conservation goals as well.

Public Benefits Derived From Establishing the FLAs:

Establishing the San Diego County FLAs will facilitate and encourage voluntary efforts by private forestland owners to protect biodiversity; key oak, riparian, and conifer forests, all of which are threatened by fragmentation and other impacts from development; wildlife habitat, including for listed and sensitive species, and habitat connectivity; and water quality, fish habitat, and other watershed values for the benefit of current and future generations. In some cases, landowners may also choose to benefit the public by protecting other forest resources and traditional forest uses defined by the SFSCC, such as public recreation, cultural resources, or scenic enjoyment.

Resource Protection Mechanisms for the FLAs:

Conservation easements purchased by the USDA Forest Service, or donated to the

Forest Service, to other eligible government agencies, or to eligible land trusts, will be the Program's tool of preference for protecting environmental values and for establishing site-specific conservation and management objectives in cooperation with willing landowners. The Program's approach to using conservation easements is discussed further in Section V.

Local Support for the FLAs:

The following local governments, organizations, and businesses have expressed their support for the Program: San Diego Association of Governments; County of San Deigo, Department of Planning & Land Use; San Dieguito River Valley Regional Open Space Park; and the Endangered Habitats League.

Other local organizations which have compatible goals and policies include: UC Cooperative Extension; The Environment Trust; Southwest Wetlands Interpretive Assn.; Anza-Borrego Foundation; San Marcos Land Conservancy; San Dieguito River Valley Land Conservancy; San Elijo Lagoon Conservancy; Pacifica Land Trust, Fallbrook Land Conservancy; Escondido Creek Conservancy

Government Entities Which Are Eligible To Assume Monitoring Responsibilities For Easements Acquired in the FLAs of San Diego County:

In addition to the non-profit land trusts listed above, as well as other qualified governmental and non-governmental organizations, the following Federal, State, and local agencies are eligible to assume responsibility for establishing and monitoring easements in the FLAs in Riverside County:

- USDA Forest Service
- USDOI Bureau of Land Management
- California Department of Forestry & Fire Protection
- California Department of Fish & Game
- Resource Conservation Districts: Upper San Luis Rey RCD (Oak Grove, Rancho Pauma, and Warner Springs FLAs), Palomar-Ramona-Julian RCD (Rancho Guejito, Mesa Grande, Warner Springs, and Pine Hills FLAs), and Greater Mountain Empire RCD (Pine Hills and Descanso FLAs)
- San Diego County

APPENDIX A:
ORGANIZATIONS REPRESENTED ON THE CALIFORNIA STATE FOREST STEWARDSHIP COORDINATING COMMITTEE

The following organizations are represented on the SFSCC as of January, 1995:

Agricultural Stabilization and Conservation Service
Association of Consulting Foresters
California State Board of Forestry
California Cattlemen's Association
California State Department of Fish and Game
CDF, Forestry Assistance Program Staff
California Indian Basketweavers Association
California State Coastal Conservancy
California Trout, Inc.
Forest Landowners of California
Inland Valley Environmental Coalition
Madera County Board of Supervisors, District 5
Plumas County Resource Conservation District
Shasta County Board of Supervisors, District 3
Soil Conservation Service
The Chy Company (Forest Industry - Forestry Consultant)
USDA Forest Service, Cooperative Forestry
University of California, Cooperative Extension Forestry

APPENDIX B: DEFINITIONS

Biodiversity: Biological diversity is a component and measure of ecosystem health and function. Biodiversity can be defined as the number and genetic richness of different individuals found within a species' population, of populations found within a species' range, of different species found within a natural community or ecosystem, and of different communities and ecosystems found within a region.

Commercially Productive Timberlands ("Timberland"): As defined by FRRAP (1988) and the USDA Forest Service, timberlands are those forestlands which are capable of growing 20 cubic feet of industrial quality wood per acre per year, and can be managed for continuous timber crops.

Conservation Easement: A conservation easement is a deeded conveyance whereby the landowner sells or donates specific land use rights to a government agency or qualified non-profit organization, thereby restricting both parties from using those rights in perpetuity, in order to protect specific natural resource values which would be harmed by development of those land use rights. Land uses which are compatible with the protection of a parcel's significant resources are not restricted.

Conversions: Generic term for situations where forestlands are used for non-forest uses, particularly those uses which alter the landscape in a relatively permanent fashion.

Cover Type Conversions: Forestland conversions involving longer-term changes in forest species composition, forest structure, and other forest conditions which are more closely related to forest management than to parcelization or non-forest development projects *per se* .

Development Conversions: Forestland conversions which involve the intentional development of forestland parcels for non-forest uses, such as residential or commercial subdivisions.

Ecological Old Growth: Ecological old growth refers to later seral stage forests which function ecologically as old growth when habitat for organisms and ecosystem productivity, including nutrient and hydrological cycling, are considered. (Spies *et al*, 1988) Defining characteristics for ecological old growth will vary with forest types, location, and other factors. Key characteristics for Douglas fir forests include the number and sizes of live old growth trees, snags, down logs, logs in streams, multiple canopy layers, smaller understory trees, canopy gaps, and understory patchiness. (FEMAT, 1993). Spies *et al* (1988) provides minimum definitional standards for ecological old growth Douglas fir and mixed conifer forests in western Washington, Oregon, and California. Douglas fir forests may develop ecological old growth characteristics between 150 and 250 years of age in most locations in this three state region. (Spies *et al*, 1988)

Forestland: For the purposes of the Program, the SFSCC defines forestlands as lands that can support 10% native tree cover under natural conditions, and that allow for management of one or more forest resources including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

Indicator Species: The term indicator species refers broadly to species whose presence indicates the health of an entire system.

Industrial Private Forestland (IPF): As defined by FRRAP (1988), IPF land is forestland owned by individuals or companies which own 5,000 or more acres of forestland nationwide, and either own a wood processing plant, or employ a permanent forestry staff and a system of regular timber harvest.

Keystone Species: Keystone species play particularly critical roles in their communities and ecosystems, such as when they provide a key link in the food chain for a particularly large number of other species.

Non-Industrial Private Forestland (NIPF): Forestland owned by private individuals or organizations which are not IPF owners.

Parcelization: Parcel divisions (or "subdivisions") which occur without immediate additional non-forest development. Parcelization is considered to be a type of forestland conversion because of how it facilitates subsequent development conversions, and how it reduces the economy of scale necessary for effective management of forest products and other traditional forest uses.

Timberland: See Commercially Productive Timberlands.

Timberland Productivity Zone (TPZ): A local land use zone created by counties in accordance with the California Timberland Productivity Act. Management and development on forestlands placed in TPZ is not supposed to interfere with those lands' potential for producing forest products. Landowners whose lands are zoned TPZ receive a reduction in property taxes in return for agreeing to the development restrictions. (Analysts sometimes assume that TPZ forestlands are synonymous with commercially productive timberlands; however, not all lands zoned TPZ may be inventoried as timberland by various resource assessments, and vice versa.)

Traditional Forest Uses: The SFSCC has defined traditional forest uses as those multiple use activities that provide various public benefits including: forest products, forage, clean water, fish and wildlife habitat, rare and native plants, cultural uses, public recreation, and/or scenic enjoyment.

Umbrella Species: The term "umbrella species" refers to species, such as larger carnivores, which have ecological significance because they require larger territories. Because of their requirements, umbrella species serve as an important indicator species in assessing the adequacy of regional and local habitat conservation and ecosystem management plans.

APPENDIX C: RESOURCE INVENTORIES & ASSESSMENTS FOR THE STATE

Figure I.

FORESTLAND BY OWNERSHIP CLASS

Vegetation coverage based on CalVeg

Figure II. Distribution of Hardwood Rangelands in California

Table I. Description of Conifer and Hardwood Forest Cover Types

FRRAP

Source: FRRAP (1988)

Table I. continued

Figure III. California's Major Rivers and Canals

Source: SLC (1993)

Figure III. continued

Figure IV.

FORESTLAND AT RISK FROM CONVERSION

Table II. Current and Projected Private Forest Ownership

This table provides the best available data on the amount of forestland in California which has been under industrial (IPF) or nonindustrial (NIPF) ownership since 1952, and the amount of forestland which is likely to exist in the future. Data from several sources is listed to provide the most comprehensive accounting. Where available, figures are provided for all forestlands; however, most data is for commercial timberlands only. Percentages are of total acreages, both public and private. Projected losses of timberland acreage largely reflect expected conversions.

	FORESTLAND *million acres (%)*		**TIMBERLAND** *million acres (%)*		
Source:	(Powell)	(FRRAP)	(Powell)	(FRRAP)	(USDA)
IPF/Year					
2040					2.2 (15)
2020					2.6 (17)
2000-2010				3.75 ---	
2000					2.8 (17)
1990-2000				3.75 ---	
1992	3.28 (10)		3.28 (20)		
1980-1990				3.75 ---	
1988		3.68 (11)			
1987			2.76 (16)		2.8 (16)
1982				3.76 (20)	
1977			2.69 (16)		
1970					2.7 (15)
1952			2.18 (13)		2.2 (12)
NIPF/Year					
2040					3.5 (24)
2020					4.0 (26)
2000-2010				3.25 ---	
2000					4.5 (27)
1990-2000				3.28 ---	
1992	14.90 (44)		4.13 (26)		
1980-1990				3.31 ---	
1988		10.8 (33)			
1987			4.80 (29)		5.1 (29)
1982				3.37 (18)	
1977			5.08 (31)		
1970					5.5 (31)
1952			6.03 (35)		6.5 (36)

Sources: Powell *et al* (1993), FRRAP (1988), USDA (1989).

Notes: Acreages are not comparable across sources. Powell (1993) includes Indian lands among NIPF; Both Powell *et al* (1993) (forestlands only) and USDA (1989) includes lands in Hawaii, which are negligible. Powell *et al* (1933) and USDA (1990) define IPFs as forestland owned by operators of primary wood processing plants. FRRAP (1988)

defines IPFs as individuals or companies which own 5,000 acres or more of forestland nationwide, and either own a wood processing plant, or employ a permanent forestry staff and a system of regular timber harvests.

Table III. Projected Population Increases by County

Counties Expected to Have Increases of 40% or Greater From 1990 to 2005:

Amador
Calaveras
El Dorado
Kern
Madera
Mariposa
Merced
Mono
Nevada
Placer
Riverside
Sacramento
San Benito
San Bernardino
San Diego
San Joaquin
San Luis Obispo
Solano
Stanislaus
Tuolumne

Counties Expected to Have Increases of 25% to 40% From 1990 to 2005:

Contra Costa
Del Norte
Fresno
Kings
Lake
Lassen
Mendocino
Orange
Santa Cruz
Shasta
Sonoma
Sutter
Tehama
Tulare
Ventura
Yolo
Yuba

Counties Expected to Have Increases of 25% or Less From 1990 to 2005:

Alameda
Alpine
Butte
Colusa
Glenn
Humboldt
Imperial
Inyo
Los Angeles
Marin
Modoc
Monterey
Napa
Plumas
San Francisco
San Mateo
Santa Barbara
Santa Clara
Sierra
Siskiyou
Trinity

Source: Finance (1990)

Table IV, Minimum TPZ Parcel Sizes, in acres, by County

COUNTY	MINIMUM SIZE	EXPLANATIONS AND ADDITIONAL CRITERIA
Alpine	0 --	
Amador	160 (0)	Divisions below minimum allowed if joint timber management plans are filed on the new parcels, down to lower limit. Parcels down to 40 acres may enter TPZ.
Butte	160 (0)	Divisions below minimum allowed if joint management plans are filed, down to lower limit. Parcels below 160 acres may enter TPZ if part of a joint timber managment plan.
Calaveras	160 (0)	Divisions below minimum allowed if joint management plans are filed, down to lower limit.
Del Norte	160 (20)	Divisions below minimum allowed if joint management plans are filed, down to lower limit.
El Dorado	160 --	
Fresno	160 (40)	Divisions below minimum allowed if joint management plans are filed, down to lower limit. Parcels down to 40 acres may enter TPZ.
Glenn	160 (0)	Divisions below minimum allowed if joint management plans are filed, down to lower limit.
Humboldt	160 (40)	Divisions below minimum allowed if individual timber management plans are filed, down to lower limit. Plans are not required in County coastal zone.
Lake	160 (40)	Divisions below minimum allowed if joint managment plans are filed, down to lower limit. Lower limit varies with site class.
Lassen	160 (40)	Divisions below minimum allowed if joint management plans are filed, down to lower limit. Parcels down to 40 acres may enter.
Madera	160 (0)	Divisions below minimum allowed if joint management plans are filed, down to lower limit.
Mariposa	40 --	
Mendocino	160 --	Parcels down to 40 acres may enter TPZ if part of a joint managment plan.
Modoc	80 --	
Napa	160 --	
Nevada	160 (40)	Divisions below minimum allowed if joint management plans are filed, down to lower limit. Parcels down to 10 acres may enter TPZ.
Placer	160 --	
Plumas	40 (0)	Divisions below minimum allowed if joint management plan are filed down to lower limit.
San Mateo	160 (0)	Divisions below minimum allowed if joint management plans are filed.
Santa Cruz	160 (10)	Divisions below minimum allowed if joint management plans are filed, down to lower limit, depending on location in County coastal or inland zones, and whether development is clustered.
Shasta	80 (40)	Divisions below minimum allowed if joint management plans are filed, down to lower limit. Lower limit varies with site class.
Sierra	80 --	Parcels down to 40 acres may enter TPZ if part of a joint management plan.
Siskiyou	40 (18)	High site class parcels may be divided below the minimum to the lower limit.
Sonoma	160 (0)	Divisions below minimum allowed if joint management plans are filed, down to lower limit.
Tehama	160 (0)	Divisions below minimum allowed joint management plans are filed, down to lower limit.
Trinity	160 (0)	Subdivisions below the minimum may be permitted, as determined individually for each TPZ area, down to lower limit.

Table IV, continued

COUNTY	MINIMUM SIZE	ADDITIONAL CRITERIA
Tulare	160 (0)	Divisions below minimum allowed if joint management plans are filed, down to lower limit.
Tuolumne	160 (0)	Divisions below minimum allowed if joint management plans are filed, down to lower limit.
Yuba	160 (0)	Divisions below minimum if joint management plans are filed, down to lower limit. Parcels down to 80 acres may enter TPZ.

Notes: Minimum parcel sizes are in acres. Acreages in parentheses are the lower acreage limit in cases where exceptions to the basic minimum acreage may be granted.

Sources: County TPZ ordinances, except for Alpine County, Romm *et al* (1983).

Table V. Types of Development Allowed Within TPZ-zoned Parcels, by County

COUNTY	PERMIT REQUIRED	DEVELOPMENT TYPES
Alpine	None	Grazing; pre-existing single family residences.
	Conditional Use Permit (CUP)	Wood processing mills; mining operations; gas, water, electric, and communication transmission facilities; commercial hunting, skiing, and other recreation facilities; one single family residence per 160 acres; other buildings required for permitted uses.
Amador	None	Gas, water, electric, and communication transmission facilities; grazing and related facilities; one single family residence.
	Use Permit	Nurseries; mineral extraction and processing; wood and agricultural products processing plants; gas and oil wells; office buildings; truck maintenance facilities; up to four single family residences per ownership, up to one residence per 40 acres.
Butte	None	Residences; gas, water, electric, and communication transmission facilities; grazing; mining.
Calaveras	None	Accepted farming practices and commercial agriculture; accepted ranching practices; hunting and fishing preserves; erosion control management; fire, ranger, or information stations; wood processing mills; one single family residence per 160 acres; group care home; day care home; home businesses; logging camps; temporary mobile homes; temporary equipment storage.
	CUP	Accessorary dwellings; commercial kennels; group care homes with more than six clients; labor camps; mineral resources extraction and production; public utility buildings, structures, and transmitters.
Del Norte	None	Temporary labor camps; grazing; recreation; mineral extraction; gas, water, electric, and communication transmission facilities.
	CUP	Wood processing plants; public recreation camps and facilities; single family residences.
El Dorado	None	Temporary logging camps; truck maintenance facilities; gas, water, electric, and communication transmission facilities; temporary camping and noncommercial recreation; grazing.
	Special Use Permit	Commerical mining; wood processing plants; gas and oil wells; heliports; other uses found to be compatible with timber growing and harvesting; one residence if the land is intensively managed.
Fresno	None	Fire lookout station; grazing; management for hunting and fishing; non-intensive recreation; wildlife preserves.
	Planning Department Review	Buildings over 35' high; low intensity private parks and camps; one single family residence per parcel; temporary logging camps; temporary wood processing mills.
	CUP	Wood processing mills; water or communication transmission facilities.
Glenn	None	Management for fishing and hunting; gas, water, electric, and communication transmission facilities; grazing; one single family residence per TPZ contract; other buildings accessory to permited uses.
	CUP	Wood processing mills; mineral resources exploration and extraction, including for gas, oil, and geothermal; commercial storage of inflammable fuels.

Table V, continued

COUNTY	PERMIT REQUIRED	DEVELOPMENT TYPES
Humboldt	None	In coastal zone: minor utilities; one single family residence. In inland zone: grazing; electric, water, and communication distribution lines; one single family residence; second residence; recreation; temporary labor camps.
	Development Permit	In coastal zone: second residence; solid waste disposal; oil, gas, and electric distribution lines; minor power generating plants; oil and gas drilling; wood processing plants; cottage industries; surface mining.
	CUP	In inland zone: wood processing plants; trailer camps and public recreation camps.
Lake	None	Temporary labor camps; one single family residence; agriculture and accessory development; grazing and row crops; oil, gas, geothermal, and mineral resource development.
	Minor Use Permit	Equipment storage yards; commercial wood yards; commercial dairies; commercial stables.
	Major Use Permit	Wood processing plants; public and private camps and RV parks; feedlots.
Lassen	None	Measures to protect timber; management for hunting and fishing; temporary wood processing mills; fire and erosion control; gas, water, electric, sewage, and communication transmission facilities; grazing; mineral and geothermal extraction involving less than three acres.
Madera	None	Agriculture; barns and other outbuildings; one single family residence.
	Zoning Permit	Guest house; second residence; home industry.
	CUP	Mining; public and private recreation camps and other recreation facilities; public stables.
Modoc	None	Grazing; beekeeping; temporary wood processing mills; low intensity recreation; fish & wildlife enhancement; public utilities; commercial energy exploration; other uses and structures compatible with timber growing; similar uses.
	Admin. Permit	Assemblage of people.
	Use Permit	Employee residences; home occupations; assemblage of people; commercial wood processing mills; commercial energy facilities; commercial recreation facilities; mining; similar uses.
Napa	None	Grazing; gas, water, electric, and communication transmission facilities.
	Use Permit	Roads, landings, and log processing facilities; noncommercial wind energy systems.
Nevada	None	Truck maintenance areas; gas, water, electric, and communication transmission facilities; grazing; noncommercial recreation; single family residence and related structures; other development accessory to customary uses.
	CUP	Public utilities; commercial mining operations below 3 acres; temporary wood processing mills; heliports.
Placer	None	Nurseries; forest stations; portable sawmills; seasonal labor camps; grazing; gas, water, electric, and communication transmission facilities; noncommercial recreation and temporary camping.
Plumas	None	Management for hunting and fishing; temporary wood processing mills; conversion to nontimber use of three acres or less; hydroelectric generating plants; grazing; public utility facilities; one residence per 160 acres; day care homes; agricultural structures.
	Special Use Permit	Public service facilities.

Table V, continued

COUNTY	PERMIT REQUIRED	DEVELOPMENT TYPES
San Mateo	None	No permit required unles considered "development:" recreation, including campgrounds and shelters; grazing; mineral and hydrocarbon production; energy resource development; gas, water, electric, and communication transmission lines; two residences, up to one per 5 acres, depending upon location.
	Minor Development Permit	Campgrounds; agriculture; single family residences; onsite manufacturing; utility transmission facilities.
	Major Development Permit	Uses considered incompatible with timber growing/harvesting which are non-minor development. (Uses which are allowed without a permit are compatible uses.)
Santa Cruz	None	Grazing; agriculture; one single family residence and accessory structures per legal parcel.
	CUP	Mineral production; water and electric transmission lines; educational and recreation camps; two residences per 40 acres; timber processing mills.
Shasta	None	Grazing; beekeeping; other uses incidental to and compatible with the primary use; hunting and fishing; and camping and other recreation not requiring permanent improvements.
	Use Permit	Employee residences; other uses incidental to forest management, including timber processing mills; mining, including for silica; water resource and geothermal development; and gas, electric, water, and communication transmission lines.
Siskiyou	None	Recreation; other uses considered compatible with timber management.
	CUP	Portable and permanent wood processing mills; mineral resources exploration and extraction; energy resource exploration; labor camps and employee residences; airport facilities; other buildings.
Sonoma	None	Temporary labor camps; nonpermanent recreation; gas, water, electric, and communication generating or transmission facilities; equipment storage; one single family residence; day care centers.
	Use Permit	Additional residences, up to one per 160 acres, four per ownership, or up to the density allowed in the county General Plan; wood processing mills; dams; quarries; airport facilities for forestry or recreation purposes; permanent recreation facilities; equipment yards; geothermal exploration and development.
Tehama	None	Temporary labor camps; portable sawmills; road rock quarries; gas, water, electric and communication transmission facilities; grazing; residences built prior to the TPZ zoning; other buildings accessory to these uses.
	CUP	Permanent wood processing mills; campgrounds; additional dwellings for uses considered compatible with timber management.
Trinity	None	Portable sawmills, chippers, and other processors; grazing and other agriculture; recreation, including skiing and boating.
	Use Permit	Single family residence; wood processing mills; trailer camps; public camps and stables; labor camps; road rock quarries.

Table V, continued

COUNTY	PERMIT REQUIRED	DEVELOPMENT TYPES
Tulare	None	Gas and water transmission facilities; grazing; outdoor education facilities.
	Use Permit	Mining and oil extraction; energy resource development, except generating plants; temporary labor camps; temporary wood processing plants; single family residence; public recreation.
Tuolumne	None	Grazing; prospecting; one single family residence per parcel.
	CUP	Additional residences, up to one per 37 acres; general farming and ranching; agricultural products processing; wood processing mills; mining; residential care homes; bed & breakfast inns; general recreation; marina development; health care facilities; sewage and water treatment plants; airports; gas, water, electric, and communication transmission facilities.
Yuba	None	Uses related to forest products harvesting and processing; gas, water, and communication transmission facilities; grazing; one residence; oil, gas, and geothermal exploration and extraction; day care facilities.

Notes: All counties allow timber growing and harvesting; the development of roads, landings, and similar timber harvest facilities; and land management for fish and wildlife habitat, and watershed values. Many also allow christmas tree farms.

Sources: County TPZ ordinances.

Table VI. Data Sources Used for the Selection of Initial Project Areas

Project Area Units

Project Areas were identified in terms of California State Department of Water Resources "Hydrological Subareas" units. In some cases, boundaries were adjusted to better account for the distribution of threatened forest resources in the vicinity of a given unit.

Development Pressure Indicators

Existing Housing Density. Forestlands with housing densities of 1 unit/40 acres to 1 unit/160 acres were identified, indicating areas which are beginning, or are already, experiencing development pressure. Source: U.S. Department of Commerce Census Bureau 1990. Data: Census Block Data. Model: All Census Blocks with 1 unit/10 acres to 1 unit/160 acres.

Developing Areas with Fire Risks. Areas with heavy fuels, medium housing density, and medium slope were used to further refine the location of forestlands which are experiencing development pressures. Source: California Dept. of Forestry & Fire Protections (CDF). Data: Severe Fire Hazard Potential Areas. Model: Areas with heavy fuels, medium housing density, and medium slope, statewide.

Forest Resource Indicators

Rare Species and Natural Communities. Source: California Natural Diversity Database (NDDB). Data: Rare Plant, animals, and natural communities. Model: Totaled number of species within each watershed; no preference given to species, rarity, or date collected.

Highly Erodible Watersheds. Source: CDC (1994b). Data: CALWATER data set hydrological basins. Model: Factors for landslides, debris slides, and surface erosion were combined; totals were used to identify highly erodible watersheds; number of highly erodible watersheds were totaled per each Legacy watershed.

Managed Areas. Source: Department of Fish & Game (DFG), CDF. Data: Managed areas are defined as DFG eco-regions/wildlife areas; Nature Conservancy preserves; Audubon Society lands; University of CA nature reserves; USDA-FS wilderness areas; USDA-FS research natural areas; and national, state, and county parks and preserves.

Significant Natural Areas. Source: DFG (1994b). Data: Significant natural areas include particularly valuable examples of rare species, communities of rare species, undisturbed rare species habitat, and centers of high species diversity. Model: Totaled number of significant natural areas; each area weighted equally.

Impaired Waterways. Source: SWRCB (1994). Data: List of impaired waterways by hydrological basin. Impaired waterways are watercourses which are so affected by point and/or nonpoint source pollution that they cannot meet applicable water quality standards even with technology based controls. Model: Totaled number of impaired waterways.

Coho Salmon Streams. Source: CDF (1994). Data: CDF May 1994 list of existing and potential habitat streams. Model: Totaled number of streams; all streams weighted equally.

Figure V.

RARE SPECIES LISTED IN THE
NATURAL DIVERSITY DATA BASE

Figure VI.

SIGNIFICANT NATURAL AREAS

Figure VII.

COHO STREAMS

Figure VIII.

BASINS WITH IMPAIRED WATERWAYS

Figure IX.

HIGHLY ERODIBLE WATERSHEDS

Figure X.

MANAGED AREAS

Figure XI.

INITIAL PROJECT AREAS OF THE
CALIFORNIA FOREST LEGACY PROGRAM

Figure XII.

FOREST LEGACY AREAS,
FIRST DRAFT AON

APPENDIX D: ADDITIONAL AREAS PROPOSED FOR INCLUSION IN THE PROGRAM BY PUBLIC COMMENTS

In addition to the FLAs proposed in the first draft AON, the following areas were proposed for inclusion in the Program's FLAs by public comments on the first draft AON:

Amador County: Forestland in the Plymouth area

Central Valley: Valley oak and riparian woodlands in the Sacramento and San Joaquin Valleys

Humboldt County: An old growth spruce stand near Crescent City; and the Mattole River watershed

Lake County: The Scotts Creek watershed

Los Angeles County: Sandstone Canyon; Diamond Bar wildlife corridor; hardwood stands in the San Gabriel Mountains; oak woodlands in the Santa Monica Mountains, including Cold Canyon; and oaks in the Calabasas area and along the Ventura County line

Mendocino County: The area located between the Petrolia and Ten Mile project areas; the Garcia River watershed; and all forestlands along Highway 1

Redwood Region: All coast redwood forests

Riverside County: Santa Rosa Plateau; Gavilan Hills; Poppett Flat/Twin Pines; Idyllwild/Garner Valley; Oak Mountain; the Anza area; and the Birmingham, Porter, and San Bernardino Water District project areas

San Bernadino County: The Grass Valley/Blue Jay parcel near Lake Arrowhead

San Diego County: Rancho Guejito; Rutherford Ranch; and the Santa Ysabel/Mesa Grande areas

San Luis Obispo County: Native stands of Monterey pine in Cambria and the Santa Rosa, San Simeon, and Pico Creek watersheds; the southern Santa Lucia mountains; and blue and valley oak stands adjacent to the Los Padres N.F. and the Santa Lucia Wilderness, and in the Salinas River watershed.

Santa Barbara County: Sedgwick Ranch; Santa Ynez Valley; and various oak woodlands

Solano County: The area north of the Suisun marsh

Sonoma County: The Gualala River watershed; the Willow Creek watershed; other areas in northwestern Sonoma County; and the Mayacamas Mountains area

In addition to the FLAs proposed in the second draft AON, the following areas were proposed for inclusion in the Program's FLAs by public comments on the second draft AON:

Alameda County: Various oak woodlands

Humboldt County: Riparian forestland within the Westhaven-Trinidad area; and areas needed for habitat connectivity between late successional or old growth forest reserves areas within the coastal redwood's growing range

Los Angeles County: Stands of valley oaks and big leaf maples, including in the Santa Monica Mountains and Sandstone Canyon; and stands of native walnut in Tonner Canyon and Brea Canyon

Mendocino County: Various oak woodlands; areas needed for habitat connectivity between late successional or old growth forest reserves; all forestland areas in the county

Orange County: Native walnut stands in Soquel, Carbon, Tonner, Brea, and Telegraph Canyons; and Tecate Cypress stands in the Santa Ana Mountains, and in Gypsum, Fremont, Blind, Weir, and Coal Canyons

San Bernadino County: Native walnut stands in Soquel, Carbon, and Telegraph Canyons

San Diego County: Rutherford Ranch; the Corte Madera area; Santa Ysabel Valley north of highway 78; Mendehall Valley on Palomar Mountain; and Cuyamaca Lake

Santa Barbara County: Various oak woodlands, and conifer forestlands adjacent to the Los Padres National Forest

Santa Clara County: Various oak woodlands

Sierra Nevada Region: Oak woodlands throughout the foothills

Statewide: Oak woodlands; late successional and old growth forests; conifer forests; and areas most threatened by non-forest development, such as lake and river shores, and ridgelines

Tuolumne County: Natural resource lands throughout the county.

APPENDIX E: DRAFT APPLICATION FORM

Project # _____ (CDF/USDA-FS use only)

APPLICANT & PARCEL INFORMATION

Applicant's Name(s): _____

Mailing Address: _____

Phone: day: _____ eve: _____

Name of Project Area: _____

Property Address: _____

Description of Property Location: _____

_____

_____

Assessor's Parcel Numbers & Acreage: _____ _____

_____ _____

_____ _____

_____ _____

Are you the owner? yes: ____ no: ____

Are you the Authorized Agent? yes: ____ no: ____

Property Owner (if not applicant) _____

Address of Owner: _____

List all legal owners or people with interest in the property, indicating type of interest: _____

_____

List any encumbrances (liens mortgages, easements, leases) on the property: _____

_____

_____

Current uses of the property: _____

_____

Present zoning of the property: _____

PROJECT TYPE

____ Conservation easement, donation to USDA-FS
____ Conservation easement, donation to land trust
____ Conservation easement, donation to other: _____
____ Conservation easement, USDA-FS purchase
____ Reserved interest deed, donation to USDA-FS
____ Reserved interest deed, USDA-FS purchase
____ Reserved interest deed, donation to other: _____
____ Fee title, donation to USDA-FS
____ Fee title, USDA-FS purchase
____ Fee title, donation to other: _____
____ Other: _____

ELIGIBILITY CRITERIA

1. Is the parcel forested with at least 10% canopy cover by conifer and/or hardwood species, or is it capable of being so forested under natural conditions? yes ___ no ___

2. Is the parcel located wholly or partially within the boundaries of a Forest Legacy Area of the California Forest Legacy Program? yes ___ no ___

3. Is the parcel located wholly within the boundaries of publicly-owned lands or incorporated areas? yes ___ no ___

4. Is the land owned by a willing donor or seller of the proposed conservation easement, reserved interest deed, or other project type? yes ___ no ___

5. Will one or more traditional forest uses continue to occur on the parcel?

A. ____	Forest products	B. ____	Forage
C. ____	Clean water	D. ____	Fish and wildlife habitat
E. ____	Rare and native plants	F. ____	Public recreation access
G. ____	Cultural resources	H. ____	Scenic enjoyment

6. Will one or more of the following conservation goals be met by including the parcel in the Program? (Information provided here will also assist CDF in prioritizing eligible parcels for participation in the Program.)

   A. ____ Prevent future conversions of forestland and forest resources. More specific objectives and resources:

_____

_____

B. ____ Protect wildlife habitat, rare plants, and biodiversity. More specific objectives and resources:

_____

_____

C. ____ Maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions. More specific objectives and resources:

_____

_____

D. ____ Protect riparian habitats, oak stands, ecological old growth, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity. More specific objectives and resources:

_____

_____

E. ____ Protect water quality, fisheries, and water supplies. More specific objectives and resources:

_____

_____

F. ____ Maintain and restore natural ecosystem functions. More specific objectives and resources:

_____

_____

For the parcel to be eligible for the California Forest Legacy Program, answers to questions 1, 2, 4, 5, and 6 must be "yes;" answers to question 3 must be "no."

OTHER CONSERVATION GOALS

Please indicate any other conservation goals which the landowner(s) wishes to meet by including the parcel in the Program:

_____

_____

_____

_____

_____

Note: CDF may ask for additional details on the forest resources and specific conservation objectives for parcels which are being considered for participation in the Program.

APPENDIX F:
STANDARD STIPULATIONS FOR CONSERVATION EASEMENTS TO BE HELD BY THE USDA FOREST SERVICE

The following is a sample conservation easement deed which contains draft standard easement terms (or "standard stipulations") which have been pre-authorized for use within those conservation easements which are purchased by the USDA Forest Service with Federal funds. Use of all or part of these standard stipulations is optional, but will speed internal review of conservation easements by the Forest Service. Any non-standard stipulations must be reviewed by Forest Service counsel. The standard stipulations enclosed here are currently being revised by the Forest Service.

All conservation easements which are purchased by the Forest Service with Federal funds must contain the following Part I stipulations:

Section A. Subdivision
Section B. Structures and Improvements
Section C. Mineral Development
Section D. Timber Harvesting and Forest Management
Section G. Waste Disposal and Hazardous Materials
Section H. Industrial, Commercial, and Residential Activities

The remaining stipulations in the enclosed deed are approved optional clauses. Additional optional clauses can be added with the concurrence of the Forest Service counsel.

APPENDIX G: PUBLIC PARTICIPATION PROCESS

Initial Sensing, July 1993.

Description:

Broad based survey of the public, landowners, and resource managers to assess public support for the California Forest Legacy Program, and help identify forest resources and traditional forest uses needing protection through the Program. The Sensing was conducted by CDF and the SFSCC. A letter and brochure explaining the proposed Program was mailed to CDF's distribution lists; press releases were also placed with 165 electronic and print media.

Coverage:

Reached over 15,000 people directly, including forest products industry organizations, forest landowners, land trusts, and conservation and environmental organizations, Indian organizations, RPFs and other private resource managers, state and local governments and

resource management agencies. Additional members of the public were reached through press releases placed with 98 print and electronic media sources and organizations.

Responses:

A total of 225 letters, postcards, and telephone calls were received. Of these, 131 were known to be from northern California, and 76 from southern California. Based upon these results and CDF's judgment that the Program could help further the agency's mission, the State decided to move forward with assessing the need for the Program. CDF's analysis of the responses showed the following distribution of support or opposition to the Program, and the reasons for these responses:

Respondents:

Reasons for Support/Opposition:

Project Area Scoping, September, 1994

Description:

Broad based survey of the public, landowners, and resource professionals to obtain feedback on the SFSCC's proposed project areas, and eligibility criteria which were used to select those areas. The Scoping was conducted by CDF and the SFSCC. A letter and map describing the proposed Areas and the Task Force's methodology for identifying and ranking them was sent to CDF's distribution lists.

Coverage:

Reached over 15,000 people directly, including forest products industry organizations, forest landowners, land trusts, and conservation and environmental organizations, Indian organizations, RPFs and other private resource managers, state and local governments and resource management agencies. Additional members of the public were reached through information packets sent to 98 print and electronic media sources and organizations.

Results:

A total of 47 responses were received. The distribution of support and opposition to the Program was roughly the same as was found in the Initial Sensing, as were the reasons given for support and / or opposition. A few suggestions for improving the Program's process for identifying

and prioritizing Project Areas were received. As with the Initial Sensing, some of these suggestions were incorporated into the Program's conservation objectives. CDF staff and the Task Force also determined that the public comment period on the first Draft AON should be used to gather local information which would be used to further refine the Program's project areas. CDF's analysis of the responses showed the following distribution of support for the Program:

Public Participation Process for the AON

1. Forest landowners, resource managers, members of the public, state, local, and Indian governments, and other interested parties were notified about the first draft AON during the first week of November, 1994. Comments were requested, particularly on the proposed project areas and eligibility criteria for landowner participation in the Program.

   Description:

   Broad based mailing consisting of a summary of the draft AON, a letter indicating where full copies of the AON can be obtained and how comments may be submitted, and a flyer advertising the public meetings for the first draft AON. CDF also maintained a 1-800 phone number for interested persons to call for information.

   Coverage:

   CDF sent mailings to the agency's distribution lists for state agencies, state legislators, the Governor's Office, American Indian governments and representatives, county supervisors, county planning directors, city councils and city managers, local and regional planning or development districts, flood control and conservation districts, resource conservation districts, recreation and park districts, universities and colleges, UC Cooperative Extension, USDA National Forests, California Oak Foundation contacts, registered professional foresters, forest products industry organizations, Board of Forestry contacts, California ReLeaf contacts, the Grass Roots Alliance, the California Owl Council, the SFSCC and SFSCC "friends," the SFSCC Task Force, the

California Urban Forestry Advisory Council, the CFIP Task Force, CDF Regional Offices, CDF Ranger Units, CDF Resource Managers, CDF Forestry Assistance Supervisors, forest landowners, land trusts, conservation and environmental organizations, as well as persons and organizations who responded to the Initial Sensing and Scoping. These mailing lists reach a total of over 13,267 people and
organizations, including 600 forest landowners, 128 land trusts, 1465 registered professional foresters, and 778 American Indian governments and representatives.

Information on the meetings and how to obtain copies of the AON was also distributed to CDF's statewide list of 98 print and electronic media sources and
organizations, and reached additional members of the public. Paid advertisements were placed by the Pacific Forest Trust in 9 major newspapers serving readers statewide and in regions where the public meetings were held, and a notice was placed in the Society of American Forester's newsletter. A number of local newspapers and television and radio stations also carried stories on the Program.

2. Copies of the first draft AON were sent by CDF to county planning departments, county boards of supervisors, individuals who responded to the Initial Sensing and Scoping, other people who requested copies during the comment period, and to county libraries for general availability.

3. Seven public meetings were held by CDF and the Pacific Forest Trust from mid-November to mid-December, 1994, in locations accessible to people who live in or near the FLAs proposed in the first draft AON. The meetings provided information on the Program's goals, proposed FLAs, and Program operation. Feedback was also solicited on the FLAs, forest resources and threats in those areas, other areas which should be included in the program, and eligibility criteria for easements to be acquired through the Program.

4. Public comments on the first draft AON were incorporated into the decision-making process for California's Program by CDF staff and members of the SFSCC's Forest Legacy Task Force. The AON addresses these comments in the text and Appendix G, Table VI.

5. The public and other interested persons were notified about the second draft AON as per the first draft during the second week of March, 1995, with the following exceptions and additions: paid advertisements were not placed, while notices were sent to persons who commented on the first draft. Copies of the second draft AON were distributed as per the first draft. Copies were also sent to additional branch county libraries, and information on the Program was also sent to the California Congressional delegation.

6. Public comments on the second draft AON were incorporated into the decision-making process for California's Program by CDF staff and members of the SFSCC's Forest Legacy Task Force. The AON addresses these comments in the text and Appendix G, Table VI.

7. Persons who previously commented on the Program were notified about the third draft AON during the third week of June, 1995. The third draft AON was intended primarily for editorial

review by the State, the USDA Forest Service, and local program partners. While no changes to the Program were made in response to comments on the third draft, these comments are addressed in Appendix G, Table VI.

8. The public will be notified of the USDA Forest Service's decision on the final AON and California's eligibility for the national Forest Legacy Program. Copies of the final AON will be made available to the public.

Analysis of Comments on the first draft AON

A total of 190 persons and organizations submitted comments on the first draft AON, either verbally at the public meetings, or in writing. (Ninety-four people also attended the meetings but did not submit comments.) Table I shows the distribution of support for the Program by respondent type. Forest management professionals, forest landowners, other businesses, and other individuals were divided, with 55% of the professionals supporting the Program, versus 34% opposing, 44% of the landowners supporting, versus 33% opposing, 50% of other businesses supporting, versus 33% opposing, and 38% of other individuals supporting, versus 56 opposing. Local agencies, land trusts, watershed councils, and environmental organizations were more consistently in support of the Program, while landowner organizations, "wise use" organizations, and a few local elected officials were more consistently opposed. Forest landowners and individuals also submitted the greatest number of comments with unclear positions. Table II provides a summary of the key reasons which each comment gave for supporting or opposing the Program. Table V lists those counties in which the planning department and / or the board of supervisors have expressed their support for the Program.

Clear patterns of support were also evident when comments were assigned to one of the four regions identified in the first draft AON. In the Redwood Region, 56 individuals and organizations supported the Program, 17 opposed it, and 9 had unclear positions. Local agencies, forest landowners, individuals, forest management professionals, watershed councils, land trusts, and environmental organizations largely supported the Program, while local landowner associations

Table I. Number of Comments Received, First Draft AON, by Respondent Type

Respondent Type	Supporting Program	Opposing Program	Position Unclear
Individual	25	37	4
Forest Landowners	8	6	4
Landowner Organizations, State		2	
Landowner Organizations, Local	1	5	1
"Wise Use" Organizations		2	
Sportsmen's Organizations		1	
Forest Management Professionals	16	10	3
Watershed Councils	3		
Bioregional Councils		1	
Land Trusts	13		
Environmental Organizations	17		
Other Businesses	3	2	1
American Indian Governments			
USDA Forest Service Districts	1		
Other Federal Agencies			
State Agencies	1		
Local Agencies	14	1	2
Elected Officials, State		1	1
Elected Officials, Local	1	3	
TOTAL	103	71	16

Table II. Summary of Key Reasons Given for Support or Opposition, First Draft AON

Key Reasons Given for Support	Number of Comments
Comment(s) proposed additional FLAs or provided other suggestions for refining the Program	28
Program is needed to prevent conversions of forest resources and to protect resources for future generations	19
Landowner, organization, or individual wishes to work with the State to help implement the Program	9
Program is needed to help protect and restore watersheds, water quality, and fisheries	7
Program can augment local government programs to develop conservation plans and/or protect forests from conversion	5
Program provides landowners with an important tool for managing their lands, including for the long term	4
Comment(s) generally support the Program's goals	4
Oak woodlands and rangelands need to be protected from development and conversion	3
Program is needed to help protect wildlife habitat and biodiversity	3
Program can help educate people about the need for stewardship and fire risk management	3
Subdivisions and urban sprawl are a primary threat to forestlands	2
Landscape level conservation planning and management is needed; the Program can help	2
Program can help landowners deal constructively with having threatened and endangered species on their lands	2
Program can help reconcile conflicts among neighboring landowners over fire risk management	2
Program provides landowners with tools to protect fragile forest resources on TPZ lands	1
Additional incentives for maintaining forestlands are needed; the Program is a good start	1
Program can help maintain forests needed to sequester atmospheric carbon	1
Program is needed to protect amenity values which make the state a desirable place to live and work	1

Table II, continued

Key Reasons Given for Opposition	
Program is a government and/or environmentalist "take-over" or land grab	17
Program is "socialistic," a "boondoggle," and/or creates another bureaucracy	11
Program will lead to other regulatory programs and "takings" of private property rights	9
Program is not needed, duplicates the TPZ program, and if needed, is not the best way to acheive its goals	7
People already said "no" to conservation programs in the 1994 general election	5
Program will devalue lands and/or reduce the local tax base	3
Program may conflict with local land use planning	2
Stricter local zoning ordinances would be more effective than the Program	2
Program will restrict housing and other development projects on forestlands	2
The USDA Forest Service should spend its funds on timber sales and timber management instead of using the Program	2
Public participation for the Program was inadequate	2
Comments provided no reason for opposition	2
The State should make small owner Timber Harvest Plans and housing development easier	1
Program is not needed in some areas because they are already developed or because conversion is not a threat	1
Program will restrict traditional forest uses	1
The Program should be put on hold until the Sierra-Nevada Ecosystem Project is completed	1
The AON needs to better justify the Program	1
Comment(s) generally opposed to the Program's goals	1

were more consistently opposed. In the Southwest Region, 20 individuals and organizations supported the Program, 1 opposed it, and 1 had an unclear position. Local agencies, individuals, forest management professionals, land trusts, and environmental organizations expressed consistent support for the Program. Among statewide organizations and individuals who were not associated with a particular region, 10 comments supported the Program, while 4 opposed it.

By contrast, of those individuals and organizations which commented on the Program from the Sierra Nevada Region, 13 supported the Program, 39 opposed it, and 5 had unclear positions. Individuals, forest management professionals, local landowner organizations, "wise use" organizations, and locally-elected officials were consistently opposed to the Program, while local agencies and environmental organizations consistently supported it. The greatest number of comments were received from individuals. Similarly, in the Klamath-Cascades Region, 4 individuals and organizations supported the Program, and 10 opposed it. Local landowner organizations, bioregional councils, local agencies, and elected officials opposed the Program, while forest landowners and forest management professionals were divided.

Table VI discusses how CDF staff and the Task Force responded to comments on the first, second, and third drafts of the AON.

Analysis of Comments on the Second Draft AON

A total of 45 persons and organizations submitted written comments on the second draft AON. Table III shows the distribution of support for the Program by respondent type. Of those landowners who expressed an opinion about the Program, 100% percent supported the Program. As with the first draft AON, the response from landowners was relatively low overall. In this case, the landowners who commented wished to have the FLAs expanded to include their property. Local government agencies, land trusts, and environmental organizations also strongly supported the Program, with only 13% of the local agencies opposing it. It should be noted that the local agency which opposed the Program was within a FLA which had been dropped from the second draft AON. Of those individuals who commented, 67% supported the Program, with 27% opposing it. Forest management professionals and local elected officials were more evenly divided, with 60% and 50% supporting the Program and 40% and 50% opposing it respectively. One "wise use" organization located within a FLA which had been dropped from the second draft also registered its opposition to the Program.

A regional analysis of comments produced the following results. Ten comments from southern California, including two local governments, supported the Program; none were opposed. Ten comments from the north coast region, including two local governments, supported the Program; one comment was opposed. Eleven comments from the central coast and Bay Area supported the

Table III. Number of Comments Received, Second Draft AON by Respondent Type

Respondent Type	Supporting Program	Opposing Program	Position Unclear
Individual	10	4	1
Forest Landowners	2		
Landowner Organizations, State			
Landowner Organizations, Local			
"Wise Use" Organizations		1	1
Sportsmen's Organizations			
Forest Management Professionals	3	2	
Watershed Councils			
Bioregional Councils			
Land Trusts	2		
Environmental Organizations	9		
Other Businesses			
American Indian Governments			
USDA Forest Service Districts			
Other Federal Agencies			
State Agencies			
Local Agencies	7	1	
Elected Officials, State			
Elected Officials, Local	1	1	
TOTAL	34	9	2

Program, including two local governments; two comments were opposed. Two comments from the Sierra Nevada region supported the Program, including one local government; three comments were opposed, including one local government. In addition, one comment from a statewide organization supported the Program, while one each from the central valley and an unidentified location were opposed. Table V lists those counties in which the planning department and / or the board of supervisors have communicated their support for the Program to CDF.

Table IV provides a summary of the key reasons which each comment gave for supporting or opposing the Program. By far the most common comment was that the Program should provide opportunities for landowners located in other parts of the state to protect their forest resources through the Program. These comments either proposed specific areas to be included as additional FLAs, or suggested that the Program should simply be made available statewide. The following analysis lists the number of comment letters which supported the idea of providing additional FLAs in a given county or region: Humboldt County - 5; Mendocino County - 6; San Diego County - 2; Santa Barbara - 1; Los Angeles, Orange, and San Bernadino - 4; Tuolumne - 1; the Bay Area - 1; the Sierra Nevada - 3; Statewide - 12. It should be noted that in many areas, additional comment letters were received which supported the existing FLAs.

Table VI discusses how CDF staff and the Task Force have responded to comments on the first, second, and third drafts of the AON.

Analysis of Comments on the Third Draft AON

While the third draft AON was intended primarily for editorial review by the State, the USDA Forest Service, and local program partners, nine comments were also received from members of the public. Five letters from local agencies, resource professionals, land trusts, environmental organizations, and individuals supported the Program. Key reasons for support were: program is needed to protect resources for future generations; program is needed to protect highly threatened forest resources in the Sierra Nevada region; changes to the Internal Revenue Service appraisal review process can make the donation of large value easements more attractive; comments proposed additional FLAs; and comments generally support the Program's goals as a voluntary program. Three letters from individuals and other businesses opposed the Program. Key reasons for opposition were: AON needs to discuss the benefits of grazing; other public programs are more deserving of funding; and program is an environmentalist "scam." The position of one additional letter was unclear.

Table VI discusses how CDF staff and the Task Force have responded to comments on the first, second, and third drafts of the AON.

Insert Table IV Key Reasons Opp / Suppt 2nd D

Table V. Counties Which Support the Forest Legacy Program in Part or Full

As of May, 1995, the county planning department and / or board of supervisors from each of the following counties has indicated that they support the Program:

Amador	Humboldt	Kern
Lake	Marin	Mendocino
Monterey	Napa	Orange
Placer	Plumas	Riverside
San Benito	San Diego	San Luis Obispo
San Mateo	Santa Barbara	Santa Clara
Santa Cruz	Sonoma	Tuolumne
Ventura		

Table VI. Responses to Public Comments

The following discussion indicates how CDF staff and the Task Force have responded to public comments which recommended changes in the Program, including expansion of the Program's scope or elimination of the Program in California. Responses are in italics.

- Conservation easements should clearly require that lands be managed or restored for biological sustainability.

  As requested by a preponderance of public comments, the Task Force identified the protection and restoration of biodiversity as a primary conservation goal. In cases where landowners wish to participate in the Program by protecting and/or restoring different components of biodiversity, such as a wildlife corridor, rare plant communities, or a natural diversity of seral stages, their conservation easements will include terms which require protection of those components. However, landowners who wish to protect other values through the Program may do so as well.

- Program is not needed in some areas because they are already developed or because conversion is not a threat.

  A number of comments on the first draft AON indicated where lands within the FLAs were already developed. In some cases, these areas were removed from the FLA; in others, the FLA in question was dropped from further consideration due to a relative lack of public support or other concerns.

- Program is a government and/or environmentalist "take-over" or land grab.

  Both the State and the Forest Service intend for the Program to help maintain the private forestland resource base for traditional forest uses by future generations. Conservation easements are being used as the Program's conservation tool of choice because they enable interested landowners to retain their land ownership and management opportunities while ensuring that specific forest resources are protected through interests held by a third party. Rights which participating landowners restrict through easements are compensated for either by the purchase of those rights at fair market value, or by income and estate tax benefits associated with easement donations. The AON has been revised to clarify the Program's intent and purposes, the strictly voluntary nature of the Program, how conservation easements work, and how language within the Federal Legacy program's authorizing statute specifically restricts the Program to working with willing landowners.

- The AON needs to better justify the Program. Program duplicates the TPZ program.

  The AON documents the need for the Program by identifying the ecological, economic, and social values associated with forestlands in California, by assessing various threats to these forestlands, including conversion to other land uses, and by considering the extent to which existing programs address these threats. The second draft AON examined TPZ zones in more detail, and found that many local TPZ ordinances permit significant levels of parcelization and non-forest development in timberlands, and that many important forestlands, including oak woodlands, are not covered by the Timberland Productivity Act and local TPZ ordinances. CDF staff and the Task Force determined that while it is appropriate in some cases to

give lower priority to TPZ lands, in other cases, the Program is needed to help protect TPZ lands from conversion threats, and to encourage management of timberlands for key fish and wildlife habitats, watershed values, and other resources which are not specifically protected by TPZ designation.

- Comments generally opposed to the Program's goals. People already said "no" to conservation programs in the 1994 general election.

  The State's decision to move forward with the Program was based upon an extensive public outreach effort; responses to this effort and comments received on the AON were predominately in favor of the Program and its goals. Nevertheless, opportunities for landowners to participate in the Program are only being provided in locales where public support was particularly strong.

- The Program should be put on hold until the Sierra-Nevada Ecosystem Project (SNEP) is completed.

  While the SNEP also examines development trends in forestlands, its scope is limited to study areas in the Sierra Nevada. Because the AON is intended to assess the need for the Forest Legacy Program statewide, and identifies FLAs in regions across the state, CDF staff and the Task Force determined that development of the Program should not be delayed. Although FLAs in the Sierra Nevada region are no longer proposed for inclusion due to a relative lack of public support, the AON amendment process provides an opportunity to reconsider the need for the Program in the region in light of SNEP's results.

- Public should not have to pay landowners who wish to do easements.

  The use of public funds to purchase conservation easements from willing landowners is tied to public benefits which would not otherwise be achieved. In establishing the Federal Legacy program, the US Congress recognized that promoting the use of conservation easements is a valid means of protecting privately-owned forest resources which have, or which affect important public and private resource values, including opportunities for future generations to conduct traditional forest uses on private lands. The public, CDF staff, and the Task Force have also identified conservation objectives for the State's Program which focus on forest resource values which are particularly threatened, which have public value, and which are not adequately protected by existing public programs and markets.

- Public participation for the Program was inadequate.

  The most frequent comments in this regard were that an insufficient number of supporting comments was received to justify moving forward with the Program, or that an insufficient number of opposing comments was received to justify eliminating FLAs in areas where important forestland resources are threatened. As documented in Appendix G, CDF has encouraged members of a broad range of publics to comment on the AON. Copies of the AON have also been made available at county libraries and county branch libraries across the state. Based upon their analyses of public comments, CDF staff, the Task Force, and the Forest Service determined that the State should continue to move forward with the Program, while focusing its conservation objectives on protecting resources which have recognized public values, and focusing its FLAs in areas where there is clear public support.

- Program should be a statewide program, and protect forest resources in counties which are not yet urbanized. Landowner wishes to participate in the Program, but is not included in an FLA. Program is needed to help protect biodiversity and habitat connectivity across the state.

  At this time, public support has been strongest in areas which have already experienced substantial conversion of private forestlands. The second draft AON has been revised to include two additional FLAs where landowners are interested in participating in the Program. Because the Program's resources are limited, CDF staff, the Task Force, and the Forest Service agreed that the Program should focus on a manageable number of FLAs at this time. However, the AON can be amended to include additional FLAs should landowners and other members of the public support inclusion of these areas.

- Program is needed to help protect oaks, riparian, and conifer forests in additional southern California counties.

  The first and second draft AONs were both revised to include additional FLAs in southern California. This change will help protect additional oak woodlands, riparian forests, and conifer forests in the two counties which were selected by CDF staff and members of the Task Force for inclusion in the Program. The AON has also been revised to include maps which detail the distribution of oak woodlands across the state.

- Program is needed to help protect natural resource lands in the Sierra Nevada.

  The first draft AON identified forest resource values, threats to forest resources, and proposed FLAs across the state, including in the Sierra Nevada. CDF staff and members of the Task Force subsequently determined that the Program should not include FLAs in the Sierra Nevada region due to a relative lack of public support there at this time. While public comment on the second draft AON also expressed support for protecting oak woodlands and other private forestlands in the Sierra Nevada which are threatened by non-forest development and other pressures, the level of support was not considered adequate.

- Program is needed to help protect watersheds, fisheries, and forest resources in the north coast region. Land fragmentation and development is a serious threat in north coast counties.

  The Mendocino County and Sonoma County FLAs both encompass watersheds with important habitat for anadromous fish, as well as watersheds which have historically provided such habitat, and are suitable for restoration. Both FLAs have been defined to provide forest landowners with opportunities to protect a variety of forest resources throughout these two counties. Certificates of Compliance are recognized as having the potential to accelerate non-forest development in commercial forestlands in these counties. The AON can also be amended to include additional areas in the north coast.

- Changes to the Internal Revenue Service appraisal review process can make the donation of large value easements more attractive.

  Changes to the IRS appraisal review process for donated conservation easements are beyond the scope of the AON. However, landowners have not generally found the review process to be a limitation on easement donations; the IRS generally only scrutinizes those appraisals which appear questionable. Landowners are encouraged to be prudent in hiring and instructing their appraisers.

- Several comments also raised more specific concerns regarding the role which hardwood rangelands and grazing play in forest management and the Program.

  The second draft AON addressed these concerns by including forage production/use as a traditional forest use, and by noting that livestock grazing has been identified as an option for managing fire fuel loads.

The following comments raised concerns about the Program's impacts. While assessing the costs and benefits of the Program is not within the scope of the AON *per se*, these concerns have been considered by CDF staff and the Task Force in determining whether the Program is needed in California.

- Program will lead to other regulatory programs and "takings" of private property rights.

  Neither the Cooperative Forestry Assistance Act of 1990, the USDA Forest Service Guidelines, nor the State's Program establishes any regulatory processes or authorities. Rather the Program utilizes tax incentives, technical assistance programs, and limited funding provided by the Forest Service and the State of California to facilitate voluntary landowner participation and achieve its conservation goals. The sale or donation of a conservation easement is an established process whereby landowners may utilize their property rights to guide management of their land by restricting incompatible forms of development. This is accomplished while retaining ownership of all other rights to their land, including fee title. The second draft AON was revised to further clarify how conservation easements work and to clarify that because participation in the Program is strictly voluntary, with the identification of FLAs being based upon existing public information, the designation of Program FLAs will not impose any new burdens or obligations upon landowners located within them.

- Program will devalue lands and/or reduce the local tax base.

  While the Program's exact impact on local tax revenues is impossible to determine at this time, CDF staff and the Task Force have found that these impacts are not likely to be significant. As discussed in the AON, property taxes on forestland located within TPZ and agricultural preserve zonings have already been reduced substantially. Property taxes are also relatively low in many cases due to Proposition 13. Consequently, landowners who restrict non-forest development on their land by selling or donating conservation easements are not likely to affect local revenues in most cases. While the Program's impacts will depend upon the extent to which forest landowners in different areas choose to participate, the general effect of the Program will be to help direct non-forest development to locations where it is more appropriate, rather than to limit development and development-related local revenues.

- Program may conflict with local land use planning.

  Letters were sent by CDF to the planning departments of all counties located within the proposed FLAs, requesting acknowledgment of whether the Program is compatible with the county's policies and programs. Two counties indicated that two FLAs included lands which were zoned for development; both FLAs were subsequently dropped from the Program due to a relative lack of support in those areas. County planning departments in all counties where FLAs are currently proposed have indicated that the

Program is compatible with their programs and policies, and have participated in helping to define their respective FLAs.

- Program will restrict traditional forest uses.

  As noted in the AON, the Task Force has identified a range of traditional forest uses which landowners may protect through the Program. In some cases, protecting one traditional use, such as maintenance of habitat for a particular wildlife species, may require some restrictions on the location and design of other traditional uses which have the potential to impact the protected use. The AON discusses the management plans which participating landowners will need to develop as part of the process of selling or donating their conservation easements. These management plans will identify the traditional use/resources which the landowners wish to protect, restore, or manage for on their land. The Program will not affect traditional forest uses on parcels which are not participating in the Program.

- Program will restrict housing and other development projects on forestlands.

  Since the Program is intended to protect environmentally important private forestlands which are threatened by conversion to non-forest uses and conditions, and to maintain opportunities for traditional forest uses, in many cases, the construction of residences and other non-forest development is likely to be restricted to some extent by landowners who choose to participate in the program.

- Program is "socialistic," a "boondoggle," and / or creates another bureaucracy.

  The US Congress, the Forest Service, CDF staff, and the Task Force have found that the national and State Forest Legacy Programs can encourage private forest landowners to protect and/or restore forest resources which have important public and private values, and to do so at levels above those required by law. The Program has been designed to utilize limited public funding to facilitate the sale or donation of conservation easements by private landowners, and to facilitate assistance in administering the Program from other potential program partners, such as nonprofit land trusts. This efficient approach takes advantage of existing conservation tools and public and private institutions to achieve the Program's goals with a minimum of public funding and staff time.

The following comments recommended alternatives to the Program. While it is not within the scope of the AON to assess alternatives to the Program, implementation of the Program in California will neither preclude nor promote alternatives which could be implemented at the State or local level.

- Stronger efforts are needed to protect forestlands and water quality.

- Stricter local zoning ordinances would be more effective than the Program.

- Federal estate taxes should be eliminated instead of creating another bureaucracy.

- The USDA Forest Service should spend its funds on timber sales and timber management instead of using the Program.

- The State should make small owner Timber Harvest Plans and housing development easier.

The following comments did not recommend a change in the Program. Concerns raised by many of the following comments are reflected in the Program's conservation objectives or other aspects of the AON.

- Subdivisions and urban sprawl are a primary threat to forestlands. Program is needed to prevent conversions of forest resources and to protect resources for future generations.
- Landowner, organization, or individual wishes to work with the State to help implement the Program.
- Program is needed to help protect and restore watersheds, water quality, and fisheries.
- Program provides landowners with tools to protect fragile forest resources on TPZ lands.
- Program can augment local government programs to develop conservation plans and/or protect forests from conversion.
- Program provides landowners with an important tool for managing their lands, including for the long term.
- Program is needed to help protect wildlife habitat and biodiversity. Landscape level conservation planning and management is needed; the Program can help.
- Oak woodlands and rangelands need to be protected from development and conversion.
- Program can help educate people about the need for stewardship and fire risk management.
- Program can help landowners deal constructively with having threatened and endangered species on their lands.
- Program can help reconcile conflicts among neighboring landowners, including over timber harvest and fire risk management.
- Additional incentives for maintaining forestlands are needed; the Program is a good start.
- Program is needed to protect amenity values which make the state a desirable place to live and work.
- Program can help maintain forests needed to sequester atmospheric carbon.

APPENDIX H: RESOURCE INVENTORIES FOR FOREST LEGACY AREAS

Table I. Forest Species of Mendocino County

Table I. continued

Source: Mendocino County (1990)

Table II. Dominant Forest Types, Sonoma County

Source: Sonoma County (1986)

Table II. continued

Table II. continued

Table III. Species Listed in the NDDB

Central Coast FLA:

Agelaius Tricolor	Tricolored Blackbird
Agrostis Blasdalei	Blasdale's Bent Grass
Ambystoma Macrodactylum Croceum	Santa Cruz Long Toed Salamander
Arctostaphylos Glutinosa	Schreiber's Manzanita
Arctostaphylos Montaraensis	Montara Manzanita
Arctostaphylos Silvicola	Bonnie Doon Manzanita
Charadrius Alexandrinus Nivosus	Western Snowy Plover
Chorizanthe Pungens Var Hartwegiana	Ben Lomond Spineflower
Chorizanthe Robusta Var Hartwegiana	Scott's Valley Spineflower
Chorizanthe Robusta Var Robusta	Robust Spineflower
Coastal And Valley Freshwater Marsh	Coastal And Valley Freshwater Marsh
Cupressus Abramsiana	Santa Cruz Cypress
Cypseloides Niger	Black Swift
Danaus Plexippus	Monarch Butterfly
Eriophyllum Latilobum	San Mateo Woolly Sunflower
Erysimum Teretifolium	Santa Cruz Wallflower
Eucyclogobius Newberryi	Tidewater Goby
Euphilotes Enoptes Smithi	Smiths Blue Butterfly
Geothlypis Trichas Sinuosa	Saltmarsh Common Yellowthroat
Grindelia Hirsutula Var Maritima	San Francisco Gumplant
Hesperolinon Congestum	Marin Western Flax
Holocarpha Macradenia	Santa Cruz Tarplant
Incisalia Mossii Bayensis	San Bruno Elfin Butterfly
Legenere Limosa	Legenere
Limnanthes Douglasii Ssp Sulphurea	Pt. Reyes Meadowfoam
Maritime Coast Range Ponderosa Pine Forest	Maritime Coast Range Ponderosa Pine Forest
Monterey Pine Forest	Monterey Pine Forest
North Central Coast Drainage Sacramento Sucker/Roach River	N. Central Coast Drainage Sacramento Sucker/Roach River
North Central Coast Short-Run Coho Stream	North Central Coast Short-Run Coho Stream
North Central Coast Steelhead/Sculpin Stream	North Central Coast Steelhead/Sculpin Stream
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh
Northern Maritime Chaparral	Northern Maritime Chaparral
Pedicularis Dudleyi	Dudley's Lousewort
Pentachaeta Bellidiflora	White-Rayed Pentachaeta
Plagiobothrys Diffusus	San Francisco Popcorn-Flower
Polyphylla Barbata	Barbate June Beetle
Potentilla Hickmanii	Hickman's Cinquefoil
Rana Aurora Draytonii	California Red-Legged Frog
Rana Boylii	Foothill Yellow-Legged Frog

Serpentine Bunchgrass	Serpentine Bunchgrass
Silene Verecunda Ssp Verecund	San Francisco Campion
Stebbinsoseris Decipiens	Santa Cruz Microseris
Thamnophis Sirtalis Tetrataen	San Francisco Garter Snake
	Barbate June Beetle
	Gardner's Yampah
	Marbled Murrelet
	Silverleaf Manzanita

De Luz FLA:

Caulanthus Simulans	Payson's Jewelflower
Clemmys Marmorata Pallida	Southwestern Pond Turtle
Cnemidophorus Hyperythrus	Orange Throated Whiptail
Satureja Chandleri	San Miguel Savory
Southern Sycamore Alder Riparian Woodland Sthn.	Sycamore Alder Riparian Woodland
Vireo Bellii Pusillus	Least Bells Vireo

Descanso FLA:

Ribes Canthariforme	Moreno Currant
Calochortus Dunnii	Dunn's Mariposa Lily

Mendocino FLA:

Accipiter Gentilis	Northern Goshawk
Agelaius Tricolor	Tricolored Blackbird
Aplodontia Rufa Nigra	Point Arena Mountain Beaver
Arborimus Pomo	Red Tree Vole
Ascaphus Truei	Tailed Frog
Calamagrostis Foliosa	Leafy Reed Grass
Campanula Californica	Swamp Harebell
Castilleja Mendocinensis	Mendocino Coast Indian Paintbrush
Coastal And Valley Freshwater Marsh	Coastal And Valley Freshwater Marsh
Coastal Brackish Marsh	Coastal Brackish Marsh
Eriogonum Kelloggii	Kellogg's Buckwheat
Eucyclogobius Newberryi	Tidewater Goby
Fritillaria Roderickii	Roderick's Fritillary
Grand Fir Forest	Grand Fir Forest
Helminthoglypta Arrosa Pomoensis	Helminthoglypta Arrosa Pomoensis
Horkelia Marinensis	Pt. Reyes Horkelia
Layia Septentrionalis	Colusa Layia
Lilium Maritimum	Coast Lily
Limnanthes Bakeri	Baker's Meadowfoam
Lupinus Milo-Bakeri	Milo Baker's Lupine
Malacothamnus Mendocinensis	Mendocino Bush Mallow

Mendocino Pygmy Cypress Forest	Mendocino Pygmy Cypress Forest
Navarretia Leucocephala Ssp Bakeri	Baker's Navarretia
N. Central Coast Fall-Run Steelhead Stream	N. Central Coast Fall-Run Steelhead Stream
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh
Pandion Haliaetus	Osprey
Progne Subis	Purple Martin
Rana Boylii	Foothill Yellow-Legged Frog
Rhyacotriton Variegatus	Southern Torrent Salamander
Silene Campanulata Ssp Campanulata	Red Mountain Catchfly
Sphagnum Bog	Sphagn um Bog
Strix Occidentalis Caurina	Northern Spotted Owl
Trifolium Amoenum	Showy Indian Clover
Upland Douglas Fir Forest	Upland Douglas Fir Forest
Valley Oak Woodland	Valley Oak Woodland

Mesa Grande FLA:

Astragalus Oocarpus	Descanso Milk-Vetch
Brodiaea Orcuttii	Orcutt's Brodiaea
Thermopsis Macrophylla Var Semota	Velvety False-Lupine

Oak Glen/Cherry Valley FLA:

Perognathus Longimembris Brevinasus	Los Angeles Pocket Mouse

Oak Mountain/Tucalota FLA:

Astragalus Pachypus Var Jaegeri	Jaeger's Milk-Vetch
Chorizanthe Parryi Var Parryi	Parry's Spineflower
Cnemidophorus Hyperythrus	Orange Throated Whiptail
Dipodomys Stephensi	Stephens Kangaroo Rat
Githopsis Diffusa Ssp Filicaulis	Mission Canyon Bluecup
Phrynosoma Coronatum Blainvillei	San Diego Horned Lizard
Satureja Chandleri	San Miguel Savory
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest
Southern Willow Scrub	Southern Willow Scrub

Pine Hills FLA:

Arctostaphylos Otayensis	Otay Manzanita
Astragalus Oocarpus	Descanso Milk-Vetch
Brodiaea Orcuttii	Orcutt's Brodiaea
Calochortus Dunnii	Dunn's Mariposa Lily
Castilleja Lasiorhyncha	San Bernardino Owl's-Clover
Delphinium Hesperium Ssp Cuya	Cuyamaca Larkspur
Downingia Concolor Var Brevio	Cuyamaca Lake Downingia
Falco Mexicanus	Prairie Falcon
Grindelia Hirsutula Var Halli	San Diego Gumplant
Lampropeltis Zonata Pulchra	San Diego Mountain Kingsnake
Limnanthes Gracilis Ssp Parishii	Parish's Meadowfoam
Phrynosoma Coronatum Blainvillei	San Diego Horned Lizard
Rorippa Gambellii	Gambel's Watercress
Rubus Glaucifolius Var Gander	Cuyamaca Raspberry
Thermopsis Macrophylla Var Se	Velvety False-Lupine

Rancho Guejito/Boden Canyon FLA:

Gila Orcutti	Arroyo Chub

Rancho Pauma FLA:

Phrynosoma Coronatum Blainvillei	San Diego Horned Lizard

Sonoma FLA:

Abronia Umbellata Ssp Breviflora	Pink Sand-Verbena
Agrostis Clivicola Var Punta-Rey	Pt Reyes Bent Grass
Alopecurus Aequalis Var Sonomens	Sonoma Alopecurus
Ambystoma Californiense	California Tiger Salamander
Arctostaphylos Bakeri Ssp Bakeri	Baker's Manzanita
Arctostaphylos Densiflora	Vine Hill Manzanita
Arctostaphylos Stanfordiana Ssp	Rincon Ridge Manzanita
Ardea Herodias	Great Blue Heron
Astragalus Clarianus	Clara Hunt's Milk-Vetch
Athene Cunicularia	Burrowing Owl
Blennosperma Bakeri	Sonoma Sunshine
Caecidotea Tomalensis	Tomales Isopod
Calochortus Raichei	Cedars Fairylantern
Calystegia Collina Ssp Oxyphylla	Mt. Saint Helena Morning-Glory
Campanula Californica	Swamp Harebell
Carex Albida	White Sedge
Ceanothus Confusus	Rincon Ridge Ceanothus
Ceanothus Divergens	Calistoga Ceanothus
Ceanothus Sonomensis	Sonoma Ceanothus
Clarkia Imbricata	Vine Hill Clarkia
Clemmys Marmorata Marmorata	Northwestern Pond Turtle
Coastal And Valley Freshwater Ma	Coastal And Valley Freshwater Marsh
Coastal Brackish Marsh	Coastal Brackish Marsh
Coccyzus Americanus Occidentalis	Western Yellow Billed Cuckoo
Cordylanthus Maritimus Ssp Palus	Pt. Reyes Bird's-Beak
Cordylanthus Mollis Ssp Mollis	Soft Bird's-Beak
Cordylanthus Tenuis Ssp Capillar	Pennell's Bird's-Beak
Danaus Plexippus	Monarch Butterfly
Delphinium Bakeri	Baker's Larkspur
Delphinium Luteum	Yellow Larkspur
Dichanthelium Lanuginosum Var Th	Geyser's Dichanthelium
Downingia Pusilla	Dwarf Downingia
Erigeron Supplex	Supple Daisy
Eriogonum Nervulosum	Snow Mountain Buckwheat
Eucyclogobius Newberryi	Tidewater Goby
Fritillaria Liliacea	Fragrant Fritillary
Fritillaria Roderickii	Roderick's Fritillary
Geothlypis Trichas Sinuosa	Saltmarsh Common Yellowthroat
Hydrochara Rickseckeri	Rickseckers Water Scavenger Beetle
Lasthenia Burkei	Burke's Goldfields

Laterallus Jamaicensis Coturnicu	California Black Rail
Layia Septentrionalis	Colusa Layia
Lilium Maritimum	Coast Lily
Limnanthes Vinculans	Sebastopol Meadowfoam
Linderiella Occidentalis	California Linderiella
Navarretia Leucocephala Ssp Bake	Baker's Navarretia
Navarretia Leucocephala Ssp Plie	Many-Flowered Navarretia
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool
Northern Vernal Pool	Northern Vernal Pool
Pandion Haliaetus	Osprey
Pleuropogon Hooverianus	North Coast Semaphore Grass
Rallus Longirostris Obsoletus	California Clapper Rail
Rana Boylii	Foothill Yellow-Legged Frog
Reithrodontomys Raviventris	Salt Marsh Harvest Mouse
Rhynchospora Californica	California Beaked-Rush
Riparia Riparia	Bank Swallow
Streptanthus Brachiatus Ssp Brac	Socrates Mine Jewelflower
Streptanthus Glandulosus Var Hof	Secund Jewelflower
Strix Occidentalis Caurina	Northern Spotted Owl
Syncaris Pacifica	California Freshwater Shrimp
Tracyina Rostrata	Beaked Tracyina
Trifolium Amoenum	Showy Indian Clover

Tenaja/Santa Rosa FLA:

Accipiter Cooperii	Coopers Hawk
Brodiaea Filifolia	Thread-Leaved Brodiaea
Brodiaea Orcuttii	Orcutt's Brodiaea
Clemmys Marmorata Pallida	Southwestern Pond Turtle
Dipodomys Stephensi	Stephens Kangaroo Rat
Elanus Caeruleus	Black Shouldered Kite
Eryngium Aristulatum Var Parishii	San Diego Button-Celery
Limnanthes Gracilis Ssp Parishii	Parish's Meadowfoam
Myosurus Minimus Ssp Apus	Little Mousetail
Orcuttia Californica	California Orcutt Grass
Phrynosoma Coronatum Blainvillei	San Diego Horned Lizard
Rana Aurora Draytonii	California Red-Legged Frog
Satureja Chandleri	San Miguel Savory
Southern Interior Basalt Flow Vernal Pool	Southern Interior Basalt Flow Vernal Pool
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland
Valley Needlegrass Grassland	Valley Needlegrass Grassland

Warner Springs FLA:

Caulanthus Simulans	Payson's Jewelflower
Dipodomys Stephensi	Stephens Kangaroo Rat
Phrynosoma Coronatum Blainvillei	San Diego Horned Lizard

Source: California Natural Diversity Data Base; Central Coast FLA also includes species indicated by the Santa Cruz County Planning Department.

Table IV. Significant Natural Areas

Central Coast FLA:

SMT-001	Elliot Creek
SMT-002	
SMT-003	
SMT-006	
SMT-009	
SMT-017	
SMT-019	Point Ano Nuevo
SMT-023	
SMT-024	
SMT-026	
SMT-027	
SCR-001	Seascape Pond
SCR-002	Ellicott Pond
SCR-004	
SCR-006	South Ridge (Olympia)
SCR-007	Olympia Southeast
SCR-008	Graham Hill
SCR-009	Brook Knoll School
SCR-010	Mission Springs
SCR-014	
SCR-015	Waddell Creek Mouth Southeast
SCR-017	Eagle Rock
SCR-020	
SCR-021	Mill Creek Ridge
SCR-025	
SCR-026	Central Calabasas Road
SCR-027	Halton Lane
SCR-029	Western Watsonville Sloughs
SCR-030	Paradise Park
SCR-031	Lower Scott Creek
SCR-033	
SCR-036	
SCR-037	
SCR-039	
SMT-001	Elliott Creek

De Luz FLA:

SDG-089	Temecula Canyon
SDG-243	

Descanso FLA:

SDG-017	Cuyamaca Mountains
SDG-056	Guatay Mountain
SDG-057	East Mesa

Mendocino FLA:

MEN-001	Manchester Beach
MEN-002	Garcia River Estuary
MEN-006	Mackerricher Dunes
MEN-008	Coast Range Preserve Site
MEN-009	Round Valley
MEN-010	Little Red Mountain
MEN-014	Red Mountain
MEN-016	
MEN-017	Little Lake Valley
MEN-018	Big River Estuary
MEN-019	Summers Lane Bog
MEN-021	Ten Mile River Estuary
MEN-025	Beale Creek Terrace
MEN-026	
MEN-028	Mouth of Alder Creek
MEN-030	
MEN-033	Mendocino County Airport Site
MEN-034	West End Albion Ridge
MEN-038	CDF Woodlands Stn. Site
MEN-040	Upper Smith Creek
MEN-041	Gibney Lane Site
MEN-044	Sunnybrook Ranch
MEN-050	Saunders Reef Beach
MEN-052	Morrison and Walker Gulches
MEN-053	
MEN-054	
MEN-055	
MEN-056	
MEN-058	
MEN-059	
MEN-060	
SON-030	Gualala River Estuary

Oak Grove FLA:

SDG-207

Oak Mountain/Tucalota FLA:

RIV-073
RIV-096
RIV-102
RIV-103

RIV-113
RIV-117
RIV-118

Pine Hills FLA:

SDG-017	Cuyamaca Mountains
SDG-018	Cuyamaca Dam
SDG-019	Los Caballos
SDG-036	North End of Cuyamaca Reservoir
SDG-057	East Mesa
SDG-075	Cuyamaca Inspiration Point
SDG-197	
SDG-218	

Sonoma FLA:

LAK-024	
NAP-003	Huichica Creek
NAP-009	Napa Slough
SOL-006	Island No. 1 Bayside Marsh
SON-001	Petaluma Marsh
SON-002	Yulapa and Upper Sonoma Creeks
SON-003	
SON-005	Knowles Corner
SON-006	Salmon Creek
SON-007	Kenwood Marsh
SON-008	Pitkin Marsh
SON-009	
SON-010	Camp Meeker Northwest
SON-011	Upper Green Valley Creek
SON-012	Harrison Grade
SON-013	
SON-014	The Little Geysers
SON-019	Upper Cheney Gulch
SON-020	Bodega Harbor
SON-021	Austin Creek
SON-022	Petaluma River Mouth/Tubbs Island
SON-023	
SON-025	Lawndale Southwest
SON-026	Todd Road
SON-027	Laguna de Santa Rosa
SON-029	Lower Russian River
SON-030	Gualala River Estuary
SON-032	Occidental

SON-033	
SON-034	
SON-035	
SON-036	
SON-037	
SON-040	Riccas Corner Northwest
SON-041	Riccas Corner West
SON-042	
SON-043	Piner
SON-044	Lower Sonoma Creek
SON-045	
SON-049	Frei Brothers Ranch
SON-053	
SON-054	
SON-055	
SON-060	The Cedars
SON-061	
SON-062	Pebble Beach Trailhead
SON-063	Shell Beach Trailhead
SON-064	Del Mar Point
SON-069	
SON-070	
SON-071	
SON-072	
SON-073	
SON-074	
SON-075	

Tenaja/Santa Rosa FLA:

RIV-015	Santa Rosa Plateau

Source: DFG (1994b)

Table V. Public Lands Within or Adjacent to the Mendocino, Sonoma and Central Coast FLAs

Mendocino FLA:

Jackson State Demonstration Forest
Mendocino National Forest
King Range National Conservation Area
Various BLM holdings
Six Rivers National Forest
North Coast Reserve
Sinkyone Wilderness State Park
Montgomery Woods State Reserve
Hendy Woods State Park
Standish Hickey State Recreation Area
Smithe Redwoods State Park
Richardson Grove State Park
Maillard Redwoods State Park
Van Damme State Park
Russian Gulch State Park
various other State lands

Sonoma FLA:

Salt Point State Park
various BLM holdings
Austin Creek State Recreation Area/Armstrong Redwoods State Reserve
Lake Sonoma
Mt. St. Helena/Robert Luis Stevenson State Park
Annadel State Park
Hood Mountain Regional Park
Sugarloaf Ridge State Park
Sonoma State Hospital lands
Kruse Rhododendron State Reserve
Maillard Redwoods State Reserve

Central Coast FLA:

San Pedro Valley County Park
San Francisco State Fish & Game Refuge
Huddart County Park
San Gregorio, Pescadero, and Bean Hollow State Beaches
Pescadero Creek County Park
Portola State Park
Butano State Park
U.S. military reserve at The Mesa
Big Basin Redwoods State Park
Castle Rock State Park
Henry Cowell Redwoods State Park

Loch Lomond County Park
The Forest of Nisene Marks State Park
State Lands between Cowell and Wilder St. Pks.
Wilder Ranch State Park
Ano Nuevo State Reserve
various BLM holdings

Table VI. Streams and Rivers with Riparian and/or Biotic Resources, Santa Cruz County

Waddell Creek
E. Waddell Creek
Scott Creek
San Vincente Creek
the upper reaches of Big Creek
San Lorenzo River, and its tributaries, including Kings, Bear, Deer, Zayante, and Fall Creeks
Branciforte Creek and Carbunera Creek
Liddell Creek
Yellow Bank Creek
Baldwin Creek
Majors Creek
Wilder Creek
Soquel Creek, and its tributaries, including Hankley Creek
Valencia Creek/Aptos Creek, and its tributaries
Borregas Creek
Leona Creek
Corralitos Creek
Green Valley Creek

Source: Santa Cruz County (1995c)

Table VII. Coho Salmon Streams

Central Coast FLA:

Big Creek
Gazos Creek
Pescadero Creek
Scott Creek
Waddell Creek

Mendocino FLA:

Albion Creek
Big River
Broaddus Creek
Brush Creek
Cedar Creek
Cottoneva Creek
De Haven Creek
Eel River
Garcia River
Gualala River
Hardy Creek
Hollow Tree Creek
Howard Creek
Indian Creek
Jack of Hearts Creek
Juan Creek
Long Valley Creek
Mattole River
Navarro River
Noyo River
Outlet Creek
Pudding Creek
Rattlesnake Creek
Ryan Creek
South Fork Eel River
Ten Mile Creek
Ten Mile River
Usal Creek
Wages Creek
Willits Creek

Sonoma FLA:

Dutch Bill Creek

Gualala River
Hulbert Creek
Russian River
Salmon Creek
Sheephouse Creek

Source: CDF (1994)

APPENDIX I: PARCEL ZONING, MENDOCINO COUNTY

A printout from the Mendocino County Planning Department which indicates the zoning of parcels within Mendocino County as of August, 1995, is on file at the CDF Program Coordinator's office and at the USDA Forest Service Region 5 office. Landowners who wish to verify the zoning of the parcels should contact the Mendocino County Planning Department or the CDF coordinator.

APPENDIX J: OFFICIAL FOREST LEGACY AREA MAPS

Official maps of the California Forest Legacy Program's Forest Legacy Areas are on file at the CDF Program Coordinator's office and at the USDA Forest Service Region 5 office. Copies of the official maps are available for review at the CDF Program Coordinator's office.

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